It's Important to Know In Time'

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The Newspaper of the Industry

Air Conditioning & Refrigeration News

Production Tools for Victory

AN INTERNATIONAL INSTITUTION ★ SUBSCRIBERS ALL OVER THE WORLD ★

Technical Governmental

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Inside Dope

By George F. Taubeneck

Proud Father
Off the Chest
You Cur, Sir!
Our Comment
How Mistakes Are Made
French Poker

Proud Father

To all the kind souls who inquire after the health and progress of son Gregory in postscripts to their letters, we have an interesting announcement to make: you can get a good look at his fine boy in several national magazines this month. His photograph is shown in the Heinz baby food advertisements.

Just 25 months old, he can identify any card in the deck, and is now working on the assembly of straight pushes—a trick his father hasn't been able to learn in 20 years of trying.

Off the Chest

Letters to the editors are a pretty good index of readership. We believe we get more—and print more—than almost any other publication in the industrial field. A great many of them show evidence of serious, constructive thinking on industry problems, and are well worth any subscriber's attention.

Nationally known editor William Feather, writing in Weatherhead's "The Weathervane," recently had this to say:

"The power of a letter to a publisher, editor, or writer is vastly underestimated by nearly everyone. If fewer fan letters are written and press agents would have us believe.

"For 20 people who will write a letter of condemnation, perhaps one will write a letter of praise. Indignation creates energy, whereas approval creates indolence."

Our experience has been quite the reverse; 20 letters of approval come in for each sorehead rebuke. Nevertheless, we do get the latter, and one arrived the other day which was an absolute masterpiece of invective—the best insulting job done on us in years. Here it is, verbatim:

You Cur, Sir!

Editor:

"I've managed to control my impulses now for several months after reading your slanderous articles but once more, after reading the Jan. 29 issue, I'm going to let go.

"I suppose that what makes me do so is the fact that your latest outburst is not even original. The *Battle Star* proposed Mr. Avery for Secretary of Labor some two weeks ago. I did not realize that the *Star* was read so far away as Detroit.

"I am surprised, though, at your omission, if only by inference, that Avery's attitude in his whole affair with the government has been unforgivable.

"You were a great supporter of Mr. Dewey (the late unlamented) for President, weren't you? By the way, you were taking all bets on Roosevelt's election. Will you ever get out of debt? Getting back on the subject, I imagine that much more to your liking would have been the appointment by Mr. Dewey of Mr. Hughes as Secretary of State. That gentleman's connection with German-American cartels would no doubt have had your whole-hearted approval.

"Off the record, Mr. Taubeneck, what position do you hold in the National Association of Manufacturers? Your continual harping on the glories of 'free enterprise' gives away as either a gullible fool or

(Concluded on Page 9, Column 1)

Coggin In Detroit Lubricator Post

F. G. COGGIN

* * *

DETROIT—E. J. Doucet, general sales manager, Detroit Lubricator Co., has announced the appointment of F. G. Coggin as manager of the company's Refrigeration Division, effective April 1, 1945, on which date the resignation of the present manager, J. W. Krall, becomes effective.

"Mr. Coggin takes over this work well prepared," said Mr. Doucet's announcement. "He has been with Detroit Lubricator Co. for 18 years in a sales and administrative capacity and has had close association with the refrigeration industry for the past 10 years."

U.S. Hears Council Appeal on Draft

WASHINGTON, D. C.—Draft deferment status of refrigeration repairmen, especially those under 30 years of age, continued to look somewhat on the dark side following the meeting Monday, Feb. 19 of a special committee from the National Refrigeration Service Council with the government's "Committee on Essential Activities."

This government committee is the one which a few weeks ago went over the list of "essential" activities and singled out some of these as "critical," the point being made that of men in the 26-29 age bracket, only those who were engaged in such "critical" occupations would get much consideration for further defer-

(Concluded on Page 28, Column 1)

34 Companies Get Quotas For Display Cases

WASHINGTON, D. C. — Quotas totaling more than 7,000 refrigerated display cases have been granted to 34 manufacturers by the Refrigeration Section of WPB, the quotas being authorized pursuant to Direction 3 of Order L-38.

The exact number assigned to each manufacturer was not revealed.

Restrictions under which the display cases are to be sold are expected to go out to WPB field offices shortly. In all probability the equip-

(Concluded on Page 28, Column 4)

Pedder & Gilbert Get Frigidaire Promotions

DAYTON, Ohio—James F. Pedder has been appointed advertising manager and Ellsworth Gilbert, sales promotion manager of Frigidaire Division, General Motors Corp. in a realignment of all advertising, display, publicity, promotional, and training activities for all Frigidaire products, announces Lee A. Clark, assistant general sales manager.

Under the reorganization, all "customer influence" functions for Frigidaire appliances, commercial refrigeration, and air conditioning products are the responsibility of the advertising department. The sales

(Concluded on Page 4, Column 2)

Reduce Copper Wire Quota For Repairs

WASHINGTON, D. C.—WPB on Feb. 15 announced suspension of CMP Regulation No. 9 and issued an amendment to CMP-9A, cutting drastically the amount of copper wire that can be used for civilian repair purposes.

CMP-9 is not revoked, but will be kept on the books in a state of suspension through June 30. If the copper wire situation improves sufficiently to meet the military demands with enough left over to provide for civilian sales also, the regulation can be put back into operation quickly.

By the suspension of CMP-9, re-

(Concluded on Page 4, Column 1)

Krall Named V.P. Of Tyler Fixture

JOE KRALL

* * *

NILES, Mich.—J. W. Krall has been appointed executive vice president of the Tyler Fixture Corp., announces Jerry Tyler, president of the company. Mr. Krall will also be elected to the Board of Directors. He will assume his new duties April 1.

Having acquired plants in Detroit and Cobleskill, N. Y., Tyler Fixture Corp. is planning considerable expansion of its business, according to Mr. Tyler, and the services of Mr. Krall have been acquired to direct this expansion program.

Widely known in the refrigeration industry through his connection with the Detroit Lubricator Co., where he served in recent years as manager of the refrigeration department, Mr. Krall is especially noted as a speaker at gatherings of jobbers and service men, and as a worker on cooperative industry committees.

Action Is Delayed on Some 'Freon' Appeals

WASHINGTON, D. C.—Action on many individual appeals for allotments of "Freon-12" refrigerant, which rate favorable consideration, is being delayed because of the inability to obtain extra quantities for such purposes before the first quarter ends, it was learned here recently.

This means that in many instances establishments that have appeals pending may not hear anything about them until sometime after April 1. It is predicted that extra allotments of "Freon-12" for civilian use will be made after that time.

Parts Production Decrease Likely In Near Future

Increased Program For Military Items Will Cut Material Supply

WASHINGTON, D. C.—Production of refrigeration parts is almost sure to decrease in the next 60-90 days.

Reason for this probable situation is that stepped-up war material programs are taking, and will continue to take an increasing percentage of the supply of critical materials.

Even if there are no further restricting orders issued, production of parts is likely to decline. Here's why. The mills and other factors that supply controlled materials are going to fill CMP allotment orders in the order of their importance, which are roughly:

(1) Military items.

(2) Industrial equipment.

(3) "Essential" consumer items.

(4) Orders bearing the "Z" allotment symbols for "spot" authorization programs.

Since refrigeration parts are in the third category, it can be seen that even though a manufacturer of parts has his normal allotment, he might find it difficult to get the controlled materials, simply because the mills had filled what they considered the more important orders ahead of his.

Manufacturers with CMP allotments who haven't placed their orders with the mills are advised that it will be wise to place them immediately.

Beyond this, it is considered quite possible that WPB may cut into present CMP allotment setups for "civilian" items.

The refrigeration industry is now receiving controlled materials for civilian items on the basis of no more than the allotments made to the same manufacturer in the fourth quarter of 1944 (with some provision for seasonal variations). The manufacturer can also use all materials and parts from inventory, and from idle stocks or surplus, to make items for which they have unfilled rated orders.

Under L-38 they are permitted to produce to fill all rated orders, but if they find their CMP allotments slashed, there is not much chance that they can produce in quantities sufficient to fill the orders.

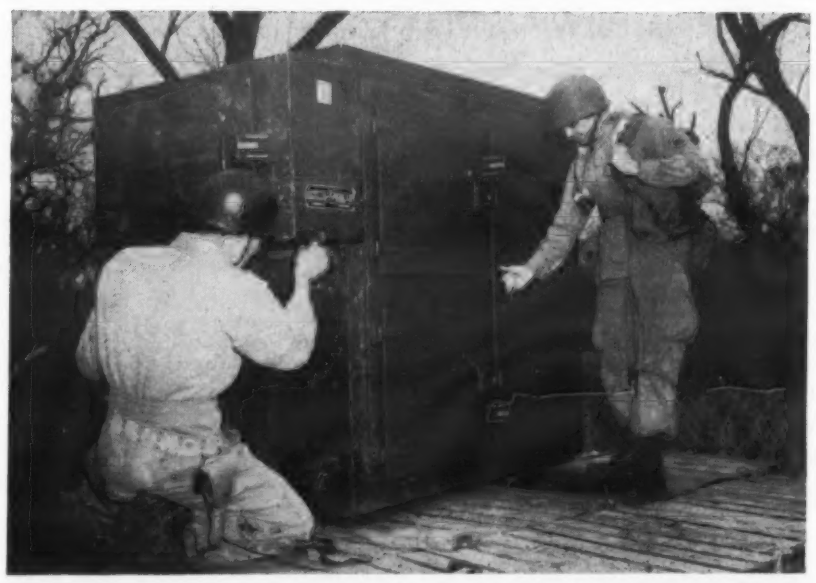
Big Reach-Ins Fly to Battle With Paratroops

SAN ANTONIO, Tex.—Demonstrations showing how the Army Air Forces drops 3,000-pound refrigeration units to mess units in forward combat areas highlighted the first AAF food service conference which was held here for three days recently.

Flying from nearby Bergstrom Field, an aerial convoy of 10 C-47 cargo planes dropped men and supplies precisely on a 1,000 square yard parade ground at San Antonio Aviation Cadet Center while the audience heard through a public address system the commands of a jumpmaster from 800 ft. overhead. The supply bundles, popped out at a rate of 30 in six seconds by a newly developed conveyor belt mechanism, floated to earth on red, yellow, and green parachutes.

As the battle-clad paratroops went into simulated combat maneuvers, cargo planes cut loose the nylon tow ropes to permit heavily laden gliders, piloted by combat veterans, to crunch smoothly to earth just in front of the reviewing stand. Mess

(Concluded on Page 4, Column 4)



A few moments after this glider-borne self-contained reach-in box hits the ground, it is put into operation by air-borne mess crews supporting paratroops. High point of the Army Air Forces food service conference in San Antonio was an actual demonstration of the landing of paratroops, mess crews, food, and equipment.

Steel For Civilians Due For Big Slash

WASHINGTON, D. C.—Steel supplies available for civilian goods and even some military programs will be slashed to a minimum during the second quarter by the War Production Board, it is predicted here.

Hardest hit will be consumer goods. Original plans called for 250,000 tons of steel to be allocated during the first quarter for "less essential" civilian items, but this figure was finally cut to 150,000 tons. It is considered likely that no steel will be earmarked for this category during the second quarter.

Steel for transportation uses, farm machinery, and that intended for shipment abroad, will also be cut, and possibly some scheduled for military programs.

Reduced production due to severe winter weather and low inventories which resulted last fall when it was generally thought that the war and war contracts would terminate soon are the chief causes of the present steel shortage, it is said.

Joint Action by Retailers & Producers Urged to Avoid Postwar 'Depression'

NEW YORK CITY—Retailers and manufacturers must cooperate in the postwar era to provide "balanced markets" and avoid the unsettling inventory accumulations which lead to "depressions," the National Retail Dry Goods Association was told by Arthur D. Whiteside, president of Dun & Bradstreet, at its annual conference.

Since "the people of this country will not tolerate planned or controlled production and distribution longer after the war than is absolutely necessary to obtain a balance between production and consumption," Mr. Whiteside said that business itself would have to assume the responsibility of eliminating violent swings of the economic pendulum.

The retail trade, he said, must prevent the accumulation of inventories caused by overbuying for speculative purposes, misjudging of the rate of consumption, or being caught when curtailment in buying by the public suddenly and unexpectedly occurs because of conditions over which merchants may have no direct control.

Characterizing market conditions since 1939 as "the strongest sellers' markets for the longest period in history," Mr. Whiteside outlined merchandising developments during four periods—1919 to 1922, 1929 to 1932, 1933 to 1937, and 1938 to 1944—to prove the powerful influence of accumulated inventories in depressing general conditions and the stimulating effect of a well-balanced market.

The sellers market in all probability will continue, the Dun & Bradstreet official said. High employment can be expected as soon after the war ends as the majority of plants are reconverted to civilian production, for the reason that an immense unfilled demand for goods and service exists.

Reconversion of industry, Mr. Whiteside thinks, should not take more than two or three months on the general average.

"The postwar periods of excessive demand will vary from months to years," he continued, "but irrespective of the length of time involved, the danger point will come when consumption and demand are on an even basis and when government controls, if they are continued, will be discontinued.

"Eventually, a violent swing from a sellers to a buyers market may develop.

"If the highest level of employment is to be maintained indefinitely in the future in this country the retailers must broaden their collective activities to obtain the data essential to keep all retailers informed regarding market conditions and inventory position of the key products handled by the retail trade.

"Retailers and their suppliers collectively should exchange the data required to enable every level of the producing and distributing system to operate on a basis of the highest efficiency.

"This is a public service aligned with the self-interest of the individual retailer, which will go far to keep the markets in fair balance and maintain employment at a maximum in the years to come."

OPA Announces Ceilings On Gibson 'Universal' Electric Range Models

WASHINGTON, D. C. — Wholesalers' and retailers' maximum prices on two electric range models manufactured by Gibson Refrigerator Co. of Greenville, Mich., and Landers, Frary & Clark of New Britain, Conn., have been established by the Office of Price Administration in Orders 167 and 168 to MPR 64.

For the Gibson model ER-394-RV, wholesalers' f.o.b. prices to dealers in quantities of one to four units are: Zone 1, $108.97; Zone 2, $110.52; Zone 3, $112.07; Zone 4, $114.27. In quantities of five or more: Zone 1, $104.92; Zone 2, $106.42; Zone 3, $107.92; Zone 4, $110.02.

Ceilings on sales of this range by retailers to ultimate consumers are: Zone 1, $169.50; Zone 2, $172; Zone 3, $174.50; Zone 4, $178.

For the Landers, Frary & Clark model ER-394-RU, wholesalers' f.o.b. prices to dealers in quantities of one to four units are: Zone 1, $114.25; Zone 2, $115.80; Zone 3, $117.35; Zone 4, $119.55. In quantities of five or more: Zone 1, $110.20; Zone 2, $111.70; Zone 3, $113.20; Zone 4, $115.30.

Retailers' maximum prices are: Zone 1, $174.95; Zone 2, $177.50; Zone 3, $179.95; Zone 4, $183.50.

Appliance Dealers Want to Keep Selling Profitable 'Substitute' Lines Postwar

CHICAGO — More than 80% of 2,165 Hotpoint dealers answering a questionnaire have indicated their intent to continue one or more of 300 wartime substitute lines in their postwar merchandising plans.

The dominant fact apparent from survey returns was that the great majority of appliance dealers, far from being stranded by four years of no new merchandise, have shown their ability to counteract appliance shortages by unprecedented activity in selling substitute lines and supplying service to an increasing list of potential postwar customers.

They have gone into such substitute activities so thoroughly as to have built up established markets that promise to make postwar continuation practical and profitable, the survey shows.

"Since the curtailment of the manufacture of appliances, what lines of other types of merchandise have you been selling that you didn't handle before the war?" asked the first question on postwar plans.

Of 1,358 answers, 217 had added none and 124 had gone into increased activity in repair work and service parts. The first group in almost every case already had established service facilities before the war, and were continuing it for the duration. The total figure of 341 represents 25% of the 1,358 dealers answering this question.

For the rest, 209 dealers had added paints and paint brushes for the duration, 199 had added furniture (new, unfinished, and used), 142 glassware, and 112 household merchandise and furnishings.

Forty-one other lines were listed, handled by less than 100 dealers in each case. Sixty dealers had added ice boxes, 56 small electrical appliances, 40 used and rebuilt appliances, and the use of used farm freezers had allowed two retailers to add frozen foods.

Most of the dealers had added more than one line, usually those of similar nature and planned for identical markets.

"Which of the above items do you intend to continue to sell postwar?" was the next question.

Of the total 859 dealers answering this one, half of them planned to continue with at least part of their wartime substitute goods. In overall figures 436 indicated that intention (50.7%), 276 said they would carry on with all the lines they had added during the war (32.2%), but 147 planed to drop them altogether (17.1%).

Of the specific appliances chosen for postwar selling refrigerators came first, named by 93.2% of the 2,165 dealers answering. Vacuum cleaners were spoken for by 86.3%, radios by 85.6%, electric ranges by 84.4%, table appliances by 82.7%.

As to brand preferences, the vote for one vs. two lines was almost even. The figures showed 981 preferring to handle only one line (45.3%), and 920 speaking for tw manufacturers (42.5%). Few dealer wanted three or four lines.

Some of the returns figures wer a distinct surprise, reveals Ward R Schafer, general sales manager fo Hotpoint. Room coolers were liste by 52.5% of the dealers answering and kitchen cabinets by 48.8%.

The latter figure is an indicatio of the number of dealers who pla to sell complete kitchens, he believes The same idea will carry unusua increases in the demands for electri dishwashers, garbage disposalls, an metal base and wall cabinets, he said

Questionnaires were mailed to total of 17,000 Hotpoint dealers They were asked to identify them selves only as to city, location, an major classification. Results her showed that 1,433 were in downtow areas (62.1%), and 520 were i neighborhood shopping areas (24% The rest were uncertain.

Almost half the total number o dealers listed their stores as appli ance specialty outlets—1,037 alto gether (47.9%); 370 were furnitur stores (17.1%), 279 were hardwar stores (12.9%), the rest departmen stores.

The survey was planned by Ediso General Electric Appliance Co.' commercial research division, an questionnaires were sent to dealer in all 48 states and the District o Columbia.

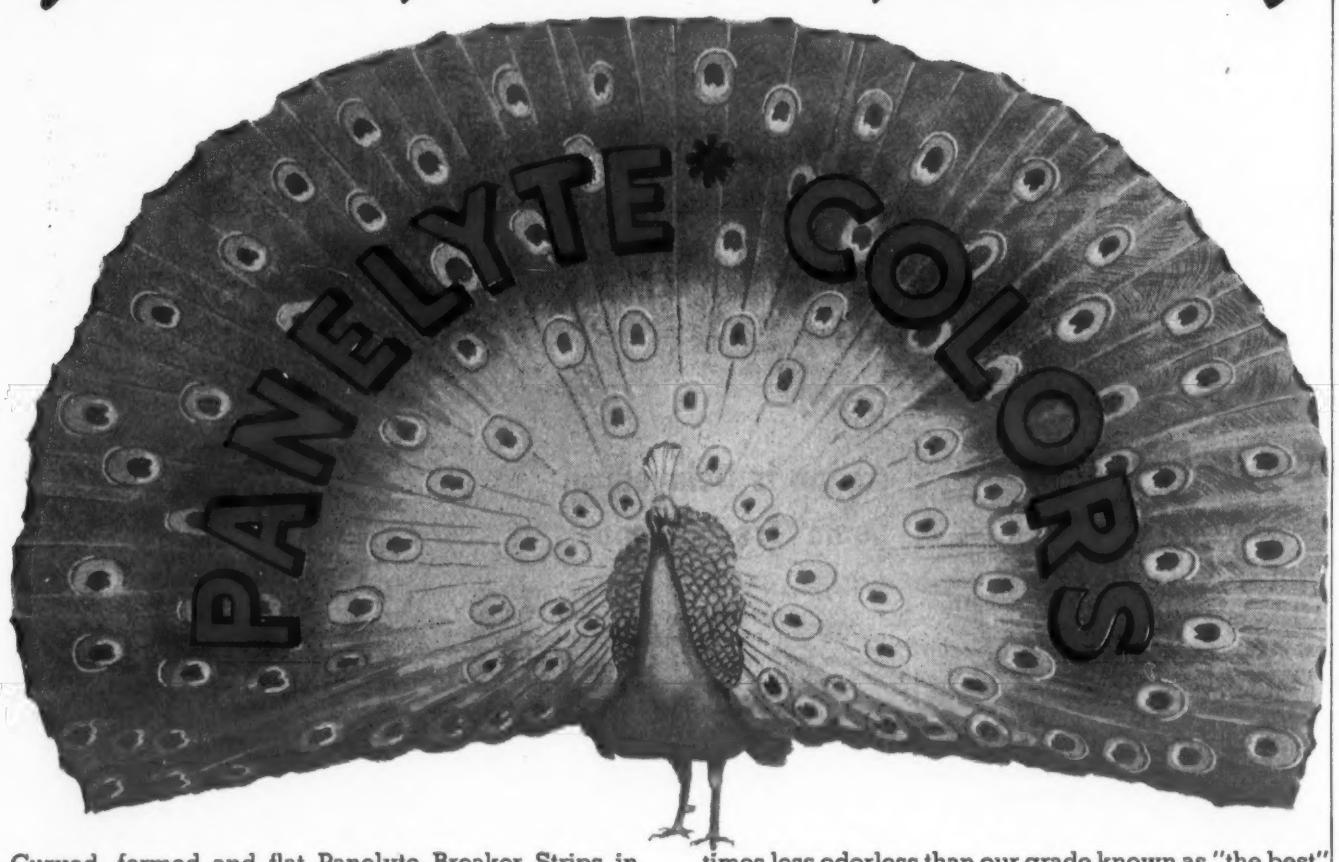
The 2,165 answers received repre sented 12.7% of the total numbe mailed, and did actually represen the entire country in their coverag Ohio returned 192, New York 18 Pennsylvania 169, Illinois 166, Michi gan 124, and California also 12 The rest of the states were belo 100 each, but all answered.

In checking the replies, 500 wer picked at random, then 750, the 1000, 1,500, and 2,000. The pattern of the trend their answers indicate in each instance were consistent, a assurance that the survey was i effect representative of all the 17,00 dealers contacted.

55 YEARS OF SPECIALIZING

CORDLEY
ELECTRIC WATER COOLERS
CORDLEY & HAYES
WRITE FOR DATA
452 Fourth Avenue
NEW YORK 16

You'll be proud as a peacock of



Curved, formed and flat Panelyte Breaker Strips in enameling stock, black or in colors, may be supplied.

We of Panelyte are proud that we have successfully matched all sample colors submitted to us by our refrigerator customers, and have produced millions of parts in these specified colors.

Panelyte offers an *exclusive* odorless laminate (40 times less odorless than our grade known as "the best" in 1940), plus the services of the Engineering staff which has maintained Panelyte's leadership in the refrigeration industry.

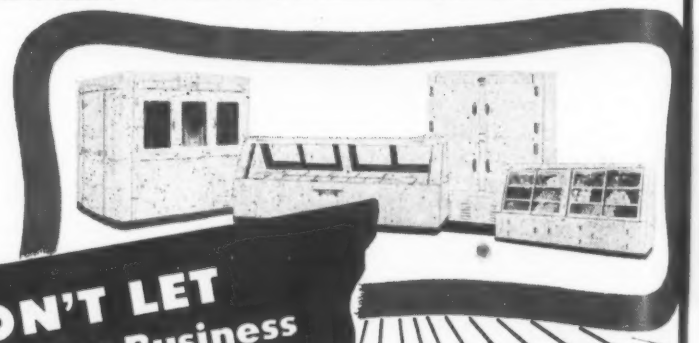
We are ready to work with you in designing and development work on structural plastic parts for refrigerators, home freeze and frozen storage units.

PANELYTE *the structural plastic*

PANELYTE DIVISION
ST. REGIS PAPER COMPANY
230 PARK AVENUE
NEW YORK 17, N. Y.

Sales Offices: Atlanta, Boston, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Kansas City, Los Angeles, Mexico City, Montreal, New Orleans, Phoenix, Portland, St. Louis, St. Paul, San Francisco, Seattle, Syracuse, Toronto, Trenton, Vancouver

* RECORD MAKER IN DESIGN, DEVELOPMENT AND MASS PRODUCTION OF STRUCTURAL RESINOUS LAMINATED PARTS FOR THE REFRIGERATOR INDUSTRY



DON'T LET
Postwar Business
slip through
your fingers

BE READY TO TAKE CARE OF ALL COMMERCIAL REFRIGERATION NEEDS just as soon as the green light says "go".

The complete Sherer line—freezers and display refrigerators of all kinds will be available when restrictions are removed. Reach-in refrigerators and walk-in cooling rooms, as well as the Sherer *distribution franchise*, are available now! Write or wire today.

SHERER-GILLETT COMPANY
MARSHALL, MICHIGAN

NEW IDEAS
FOR POSTWAR APPLIANCE DEPARTMENTS

Kelvinator Issues a Great New Portfolio of Practical Designs and Plans for Postwar Appliance Display

Kelvinator Retailers will receive unusual co-operation from Kelvinator in re-designing the postwar layouts of their appliance departments in the form of a new portfolio, "Displaying Appliances of Tomorrow." Filled cover to cover with new and practical ideas, it is a working guide, complete with blueprints, for making appliance departments more attractive and more efficient selling centers in the postwar years.

The result of months of study by architects, display and merchandising men, "Displaying Appliances of Tomorrow" contains practical, usable ideas for various types of store layouts.

The department and furniture store will find six distinctly different display modes with the variations necessary for adapting them from single bay to 6 bay space.

The specialty appliance dealer will find full and complete store layouts—involving the techniques of proper display for record, radio, small appliance departments, as well as major appliance departments. The designs include not only interior but also exterior store front designs, together with practical ideas for remodeling present show cases to fit in with the new store motif.

And each department layout and each display idea is designed not for show, but for the fundamentals of building traffic and making selling within the store more efficient through better display and arrangement.

Here is another example of what Kelvinator means by "Retail-Minded" action . . . another example of how the Kelvinator Franchise is designed to build, for those who hold it, a long-term, highly profitable business.

LOOK AHEAD WITH

TUNE IN: A New Radio Hit Show! "The Andrews Sisters" and Guest Stars Sundays 6:30 P.M. E.W.T. Blue Network

Kelvinator
DIVISION OF NASH-KELVINATOR CORPORATION
Kenosha · Milwaukee · DETROIT · Grand Rapids · Lansing

Drastic Restrictions Put on Copper Wire

(Concluded from Page 1, Column 3)

tailers must immediately cancel all outstanding orders for copper wire on which they used the allotment symbol V-3.

The limits on the repairman's purchase of copper wire under CMP-9A are reduced as of Feb. 15 to $75 worth of wire per calendar quarter or 10% of what the repairman used in 1941, whichever is higher. The former limits under CMP-9A were $150 or one eighth of his 1941 use, whichever was higher. The amendment provides that the alternative choice of the 10% base will not be allowed unless the repairman produces definite records.

The prohibited uses are:

1. No new connecting or attachment cord may be supplied for a vacuum cleaner, washer, refrigerator, iron, radio, lamp, fixture, or any other electrical appliance or piece of equipment where it is possible, by patching or by the use of insulating tape, to put the old cord in condition for reasonably good service for the remainder of 1945.

2. No wire may be used to assemble or make up a new connecting or extension cord, for resale or gift purposes, or to accompany or be used with any appliance or piece of equipment being repaired or sold.

3. No new wiring of any kind may be installed in any building except to the extent permitted by Direction 2 to CMP-9A. If wiring is in fact damaged, it may be replaced with only the minimum amount necessary.

Frigidaire Names Promotion Chiefs

JAMES F. PEDDER
Newly appointed advertising manager for Frigidaire.

* * *

(Concluded from Page 1, Column 3)

promotion department will be responsible for all activities designed to inform, train, and stimulate the selling organization.

Mr. Pedder, who has been with Frigidaire in various advertising capacities for more than 17 years, held the prewar position of assistant advertising manager.

D. S. Stophlet Dies; Was Veteran Dealer In Moline, Ill.

MOLINE, Ill.—Donald S. Stophlet, long active in appliance merchandising and owner of Lofgren's Appliance Store here, died recently at the Veteran's Hospital in Wood, Wis.

A graduate of Culver Military Academy and the University of Chicago, Mr. Stophlet was a long distance runner on Coach A. A. Stagg's famous Chicago U. track teams. During World War I, he served as a first lieutenant of field artillery in the 80th Division, and was wounded during the Meuse Argonne campaign. He was retired from the army in 1923.

First G.I. Loan To Buy Refrigerator Truck For Meat Dealer

FALLS CHURCH, Va.—The first G. I. business loan to be made by the Veterans Administration enabled the recipient, Jack Charles Breeden, to purchase a refrigerator truck, which he will use to establish a wholesale meat business serving some 25 stores in northern Virginia and the Washington, D. C., area, it was announced by the Veterans Administration.

Amounting to approximately $3,000, the loan was made to Mr. Breeden by the Hamilton National Bank of Washington, with 50% of the loan being guaranteed by the Veterans Administration.

50-Ft. Reach-in Backs Up Paratroops

An hour after this 50-cu. ft. 1½-ton glider-borne refrigerator landed during an Army Air Forces demonstration at San Antonio, it was holding food at a temperature of -18° F. In the meantime the air-borne mess crew had prepared a hot meal for paratroops.

* * *

Demonstration by Air-Borne Mess Crews Highlights Air Forces' Food Meeting

(Concluded from Page 1, Column 2)

personnel, who had parachuted to earth seconds earlier, dragged refrigeration and kitchen equipment from the gliders and within less than an hour after the first plane had appeared in the sky, a hot steaming meal was ready for serving to the paratroopers.

In the meantime, the 50-cu. ft. ton-and-a-half refrigeration units had been assembeld and in a similar period of time had attained a temperature of —18° F.

Climaxing the demonstration was the return of the C-47's to snatch the reloaded gliders to carry them forward to a new location in emulation of actual battle practice.

Under the direction of Brig. Gen. W. R. McReynolds, air quartermaster, the first AAF food service conference assembled to review accomplishments in food service during three years of worldwide aerial warfare, to analyze the general problems of organization and to consider the possibilities for further improvement by a coordinated and integrated food service program.

Representatives of the 15 AAF commands in the continental United States, leading AAF food authorities from Washington, including a score of general officers from various installations, and civilian food consultants participated in the conference.

Washington military representatives involved in the task of feeding Uncle Sam's fighting men pointed out the angles peculiar to the AAF, such as "in-flight" feeding, use of non-gas-forming foods for high altitude bombing missions, and development of facilities for providing nutrition in the drastically different climatic conditions under which men fight and fly.

During night sessions conferees inspected foods, packing methods, and container displays in the Gunter Hotel Rose Room. Food manufacturing, processing, packaging, and distributing companies were represented and the subsistence research and development laboratory of the quartermaster corps displayed the various types of rations developed for use in combat operations.

Before dawn on the second day of the conference officers and civilians started a tour of warehouses and cold storage plants at Fort Sam Houston and to the Fort Sam Houston Bakers and Cooks Schools where they witnessed operations at the bakery which supplies four military installations in the San Antonio area and visited classes for mess personnel.

At mid-morning the 60-jeep convoy was lined up by a San Antonio packing establishment where the process of preparing quick-frozen boned beef for military shipment was demonstrated. After a tour of San Antonio Air Technical Service Command depots, the conferees had a typical GI lunch at a Kelly Field unit mess and began an afternoon of conferences on such subjects as elimination of food waste and planning of the war department master menu. Bakery training aids were demonstrated at the evening session.

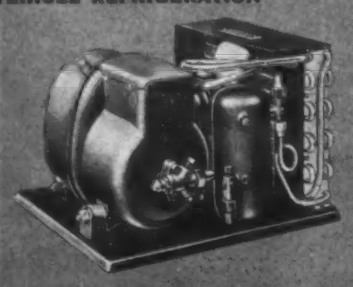
Opening with a 7 o'clock breakfast at the WAC mess at Randolph Field, the conferees spent the early morning portion of the final day on such subjects as central meat cutting plants and fat conservation, garrison bakeries, central pastry shops, mess equipment, and coffee brewing. Later special War Department consultants spoke on the use of civilian food authorities, and information was developed regarding specialized food training for AAF personnel and on the subject of combat messes and training.

The final afternoon was devoted to a round table discussion of AAF organization and food service programs in commands and special problems of the Army Air Forces. The concluding summary of the conference was delivered by Brig. Gen. McReynolds.

"They sign up faster . . . when you Sell Servel*"

*Servel's new "Supermetic" condensing units will serve dealers and fixture manufacturers in every vital field

1. STORE FIXTURES
2. MILK COOLERS
3. HOME LOCKERS
4. BEVERAGE COOLERS
5. VENDING MACHINES
6. ROOM COOLERS
7. FARM FREEZERS
8. WATER COOLERS
9. INDUSTRIAL COOLING
10. VEHICLE REFRIGERATION



"It's not hard to figure out why it's so much easier to sell Servel condensing units. They've proved their ability to deliver economical, trouble-free performance—for the past twenty years. So people know they can depend on Servel units.

"That confidence in Servel performance will make money for us Servel dealers after the war. It will give us a head start in new fields—like the frozen foods market. Servel is bringing out a new 'Supermetic' line—especially designed for these new applications. These new units will sure keep 'em signing up faster.

"And they'll *stay* signed up, too. That's another good thing about selling Servel. You can give a customer a model with the right capacity for his job. So you can quote a good price, because there's no waste capacity. And on the other hand, there's no danger of overloading. That keeps service calls down. Do you wonder why I say I'm glad I sell Servel?"

The remarks above are typical of many we hear from both manufacturers and distributors. If you'd like to learn more about their reasons for making them—and about the advantages of Servel units in your business—write today.

FREE: For information about Servel condensing units, and for an authoritative discussion of one of the most promising of post-war markets, send for your free copy of "A Study of the Farm and Home Freezer Market After the War." Address Servel, Inc., Dept. RN, Evansville 20, Ind.

SERVEL, Inc. Electric Refrigeration Division, Evansville 20, Indiana

For: TRUCKS, LOCKERS, COOLERS, COUNTERS, CABINET CONVERSIONS, use:

KOLD-HOLD PLATES

KOLD-HOLD MFG. CO.
LANSING, MICH., U.S.A.

MASTERCRAFT ADJUSTABLE REFRIGERATOR PAD

NATIONALLY ENDORSED

Pad is adjustable to all makes and sizes of refrigerator cabinets; thoroughly protects finish of cabinet from scratches and mars during moving; easily and quickly put on or off; sturdy, lasting construction; easily pays for itself in a short time. Price $11.75 each.

Attractive lettering of your name on pad at $2.00 each extra.

For carrying your refrigerator more safely and easily, use the Mastercraft Adjustable Carrying Harness which is a separate unit from the pad and priced at $3.50 each.

Write for complete folder and prices on pads for refrigerators, washers, ironers, ranges, radios; also furniture pads and protective covers. . . . All prices subject to change without notice.

BEARSE MANUFACTURING CO.
Incorporated 1921
3815-3825 Cortland St., Chicago 47, Illinois

Here is your answer

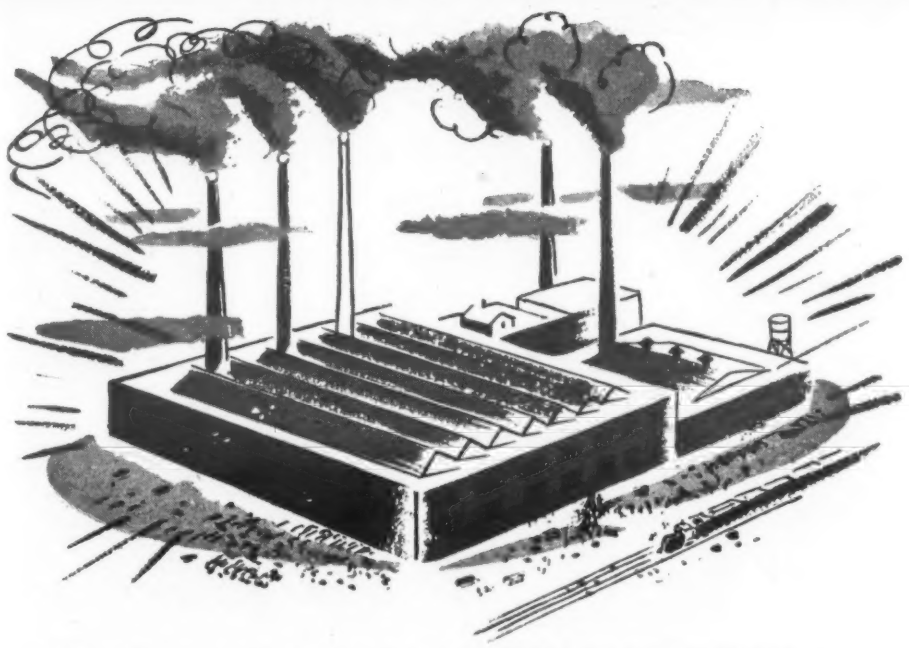
WHEN FACTORY PRODUCTION

WON'T GO AROUND

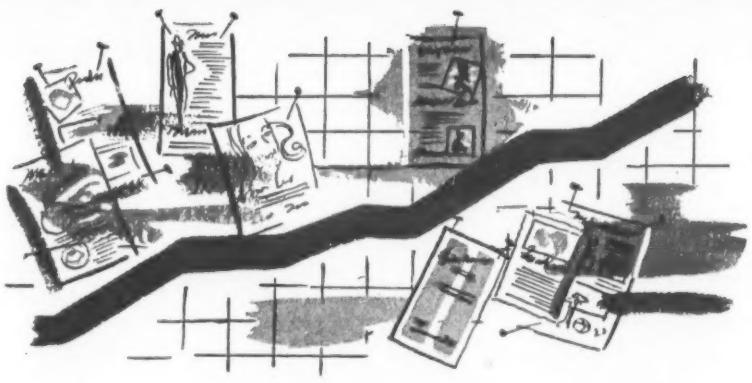
You can make capital out of a small factory output by concentrating your selling in the $4,496,734,000 Chicago market. Instead of spreading your distribution thinly throughout forty-eight states and not being important in any of them, you can be an outstanding success in this rich key market, famous for its purchases of autos, washing machines, radios, furnaces and other "big unit" products.

Here is a compact market easily accessible to factory and salesmen, with billions of pent-up savings and celebrated for breaking sales records again and again. Dealer and consumer surveys reveal a tremendous backlog of business. Postwar purchases—new and replacement—make certain *you can get going quickly and can build solidly for sustained high volume.*

You can get dealer support and consumer acceptance throughout the entire market at one low cost through a single advertising medium—the Chicago Tribune. Seven days a week, the Tribune reaches the families in this market with a selling impact that is without equal. One out of every three families in 756 cities and towns of 1,000 or more population reads the Tribune on weekdays. On Sundays, it is practically every other family —at one of the lowest milline rates in the United States.



If your factory production is going to be small during the first year or so after reconversion, the Chicago market merits and will reward your full attention and sales effort. If you can stock dealers throughout the United States, this market is still too big to leave wide open to competitors. For market facts and merchandising suggestions, call for a Tribune representative.



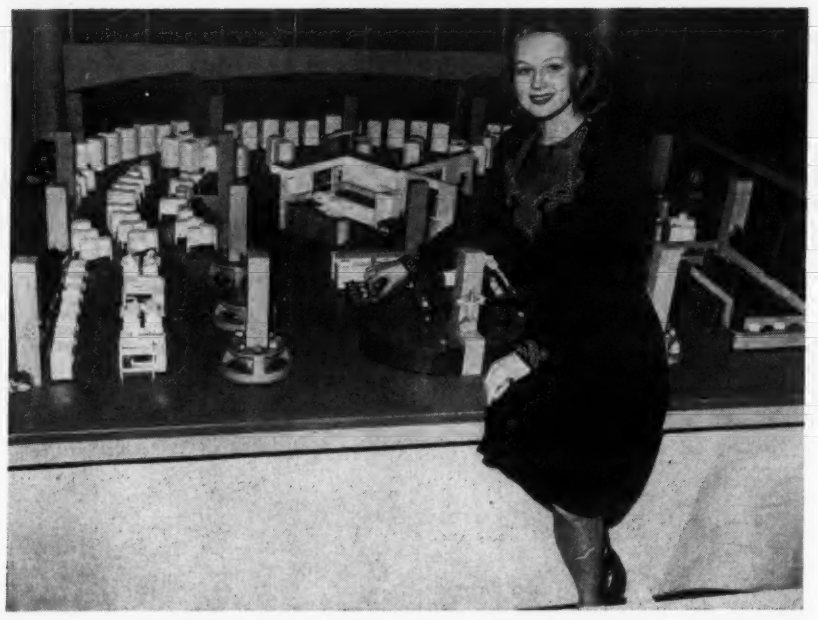
Now available for your study and use are the findings of a market-wide dealer and consumer investigation revealing ownership of automobiles and electrical appliances, brand preferences and expected buying. To get these facts, address C. S. Benham, Manager, National advertising, Chicago Tribune, Tribune Tower, Chicago 11, Illinois.

Chicago Tribune

THE WORLD'S GREATEST NEWSPAPER

January average net paid total circulation: Daily, over 935,000; Sunday, over 1,300,000.

A 'Princess' Inspects G-E's 'Electric City'



Representing a department store appliance section of the future, including a display of miniature electrical appliances, this "Electric City" was developed by General Electric Co. and displayed for the first time in New York City recently at the National Retail Dry Goods Association meeting. Girl is Virginia Mayo, starring in the movie, "The Princess and the Pirate."

New Handbook Is Guide To Store Modernization

CHICAGO — "Modern Stores," a 160 page handbook of basic ideas for modernizing a store when construction again becomes possible, has been issued by the National Retail Furniture Assn.

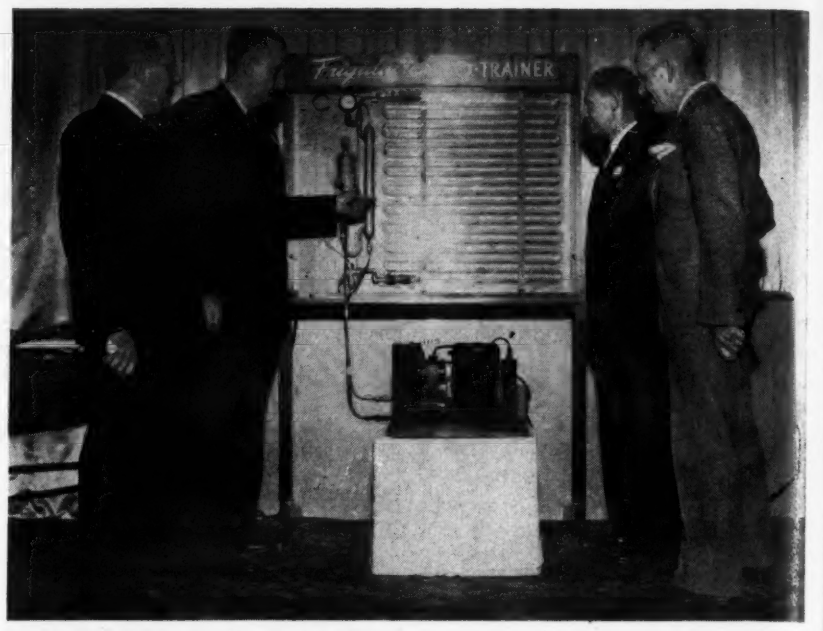
The manual discusses installation of store fronts, interior designs, window backgrounds and displays, presenting the ideas of the nation's top commercial architects and industrial research laboratories.

Effective use of materials such as plywood, porcelain, steel, bronze, glass, and tile is emphasized. Photographs and line drawings illustrate the departmental layouts and displays discussed.

The manual is the result of a survey taken by the furniture association some months ago. Hundreds of furniture merchants are planning modernization of their stores after the war, the survey revealed.

The ideas set up in the handbook apply generally to any store, and the furniture association has indicated its willingness to mail copies to anyone requesting. Write to them at 666 Lake Shore Drive, Chicago 11, Ill.

Frigidaire Men Study Training Device



To aid in explaining the principles of refrigeration to both new and veteran mechanics, Frigidaire has developed the "Viso-Trainer." Discussing it here are W. I. Buchanan, Chicago branch manager; H. F. Lehman, assistant general sales manager; H. T. Mattern, central region chief; and E. D. Davis, Denver branch manager.

Jack Lee Elected Head Of Atlanta Dealers

ATLANTA—Jack Lee, manager of the Rosewood Furniture Co., was re-elected president of the Atlanta Electrical Dealers Association at its recent annual meeting here.

Also named were Howard J. Wilson, of the Georgia Power Co., vice president; J. R. Hollingsworth, of W. D. Alexander Co., honorary secretary; directors, to serve two years: Judson Draper, of Davison's; A. D. Hammond, manager of Graybar Electric Co.; Charles S. Martin, of Charles S. Martin Distributing Co.; and W. D. V. Hopkins, of Hopkins Equipment Co.; and directors to hold over this year, Robert B. Shelley of Rich's; John Oliver, of King Hardware; and Joe Almand, of Sterchi Brothers Stores, Inc.

Solway's Plans on G-E For Postwar Line

CINCINNATI—Solway's Furniture Co. has announced that postwar they will handle a complete line of General Electric major home appliances in both their downtown and Elder Street stores.

Brunswick, N. J., Dealer Buys Big Building

BRUNSWICK, N. J. — Eisler's, household appliance and commercial refrigeration and air conditioning dealer, recently purchased and occupied a three-story brick building at 63 French St. here to prepare for postwar expansion.

First floor of the building has been remodeled and is equipped for air conditioning, according to Andrew Eisler, owner of the firm. Included in the new store is a room for private demonstrations of television receivers when the latter become available.

In addition to a complete appliance line of refrigerators, washers, dishwashing machines, home freezers, electric and gas ranges, etc., the firm will also continue its commercial refrigeration and air conditioning lines. A large phonograph record department also handles sheet music sales.

Herb Brennan Appointed Vice President of Associated Radio

TAMPA, Fla.—Herb Brennan has been appointed vice president of Associated Radio Co., Welburn Guernsey, president, announced here recently. The Associated Radio Co. is the largest radio chain store operation in the South, with stores in Tampa, Orlando, Lakeland, and Sarasota.

Mr. Brennan was formerly the district manager of the Tampa and Miami offices of the War Production Board. Prior to the war, Herb Brennan was well-known in the radio and appliance industry. In the early thirties, he introduced Norge to the Metropolitan New York market and when the war broke out he was associated with Thomas W. Berger, Inc.

Tri-State Distributors Named by Admiral

ALBANY, N. Y. — Tri-State Distributors, Inc. of Albany, have been named distributor of Admiral refrigerators and other appliances.

Philip S. Dorlon, president of Tri-State Distributors, was formerly office manager and credit manager for the RCA distributor in the Albany territory. Charles G. Houghtaling, sales manager of Tri-State, has been in the electrical appliance business for approximately 20 years.

United Distributors, Inc. of Washington, D. C., will be the exclusive distributor of Admiral products in that area. Joseph A. Doyle is the vice president in charge of the appliance division.

Another SOLA CONSTANT VOLTAGE TRANSFORMER
that has an important future in YOUR postwar plans

There may be one vulnerable spot in the design of *your* equipment that this SOLA Constant Voltage Transformer will correct.

Your customers do not have the stable line voltage called for on your label. They will blame *your* equipment for inefficient operation, *not* the fluctuating voltages that really cause it.

Build this SOLA Constant Voltage Transformer into your product and you can be certain that the operating voltages will always be within ±1% of rated requirements regardless of line fluctuations as great as 30%.

This SOLA Constant Voltage Transformer is built to fit your equipment. (Note the small, compact dimensions.) Its low cost will fit your production budget. Its automatic operation will eliminate the need for other costly components, and relieve your customers of the responsibility of making manual voltage adjustments.

There's a powerful sales story behind a product equipped with a SOLA Constant Voltage Transformer.

SOLA Constant Voltage Transformers

To Manufacturers: *Built-in voltage control guarantees the voltage called for on your label. Consult our engineers on details of design specifications.*

Ask for Bulletin 23 CV-103

Transformers for: Constant Voltage • Cold Cathode Lighting • Mercury Lamps • Series Lighting • Fluorescent Lighting • X-Ray Equipment • Luminous Tube Signs • Oil Burner Ignition • Radio • Power • Controls • Signal Systems • Door Bells and Chimes • etc. SOLA ELECTRIC CO., 2525 Clybourn Ave., Chicago 14, Ill.

Filtrine HIGH EFFICIENCY

LOW TEMPERATURE
WATER COOLERS
For Bakeries, Bottlers and General Application
Capacities to 300 G. P. H. and storage to 150 gallons.
Water Cooled to 34 degrees.
SAFE-DEPENDABLE-EFFICIENT
SHIPMENT FROM STOCK
Write for Complete Catalog
FILTRINE MANUFACTURING CO.
53 Lexington Ave., Brooklyn 5, N. Y.
"Manufacturers for Over 40 Years"

Fahrenheitor

Cools Air-Warm Bottles
in 10 minutes to 45°
in 15 minutes to 35°

Lead Crystal handblown
9" x 1" cork jacket handturned

$22.00
(West of Denver $22.50) Retail (Fairtraded)

U. S. PATENTS 2,075,831; 2,163,568
Trademark Registered U. S. Patent Office.

Mr. Dealer:

Wherever you sold a refrigerator you can sell a Fahrenheitor as accessory. Uses 1 tray of ice plus ordinary salt to cool Quart Bottle in record time.

Ideal ice cube pail. Holds ice overnight.

Women love its beauty,

Men its utility.

Immediate Delivery

Dr. Peter Schlumbohm, *Manufacturer*
41 Murray St., New York 7, N. Y.

Electric Ranges Rank High in Plans for Postwar Kitchens

CHICAGO—Results of a study of consumer wants, having special interest to dealers serving "better than average" clientele, indicating new profit opportunities in steel cabinets and electric sinks, has been released by Edison General Electric Appliance Co.

First tabulations of preferences in kitchen equipment expressed on applications for "personalized" kitchen plans, the $3 service offered with Hotpoint's "Your Next Kitchen" booklet, show that 80% of those planning to build will want an electric range, 71% a new electric refrigerator, 69% an electric dishwasher, 58% a garbage disposall, and 82% steel cabinets.

Of those who will remodel, 48% ask that an electric range be put into the plan, 52% say they will want a new refrigerator, 67% want dishwashers, while 51% say that their sink will enclose a garbage disposall; and steel cabinets are asked for in the plans of 81%.

The booklet enclosing the plan application also offers standard floor plans at no cost. Of the 700,000 copies of the planning guide distributed to date, an apparent 40% are asking for one of the six plans of which a choice is offered. The personalized plan, suggested only when none of the prepared designs is suitable, has attracted approximately 500 requests.

In announcing the tabulations from these returns, Ward R. Schafer, general sales manager for the makers of Hotpoint appliances said:

"The needs of families requesting the personalized plans are probably above the average for all who plan to build. The average price of the homes they will build is between $8,000 and $10,000. Because that market is especially attracted to electric sinks with dishwashers and garbage disposalls, dealers serving areas of better than average communities will find these prospects pre-sold."

He said that designing a kitchen from bare room dimensions without other information, was not possible, with the result that applicants for those kitchens were asked to answer 26 questions amplifying their living needs.

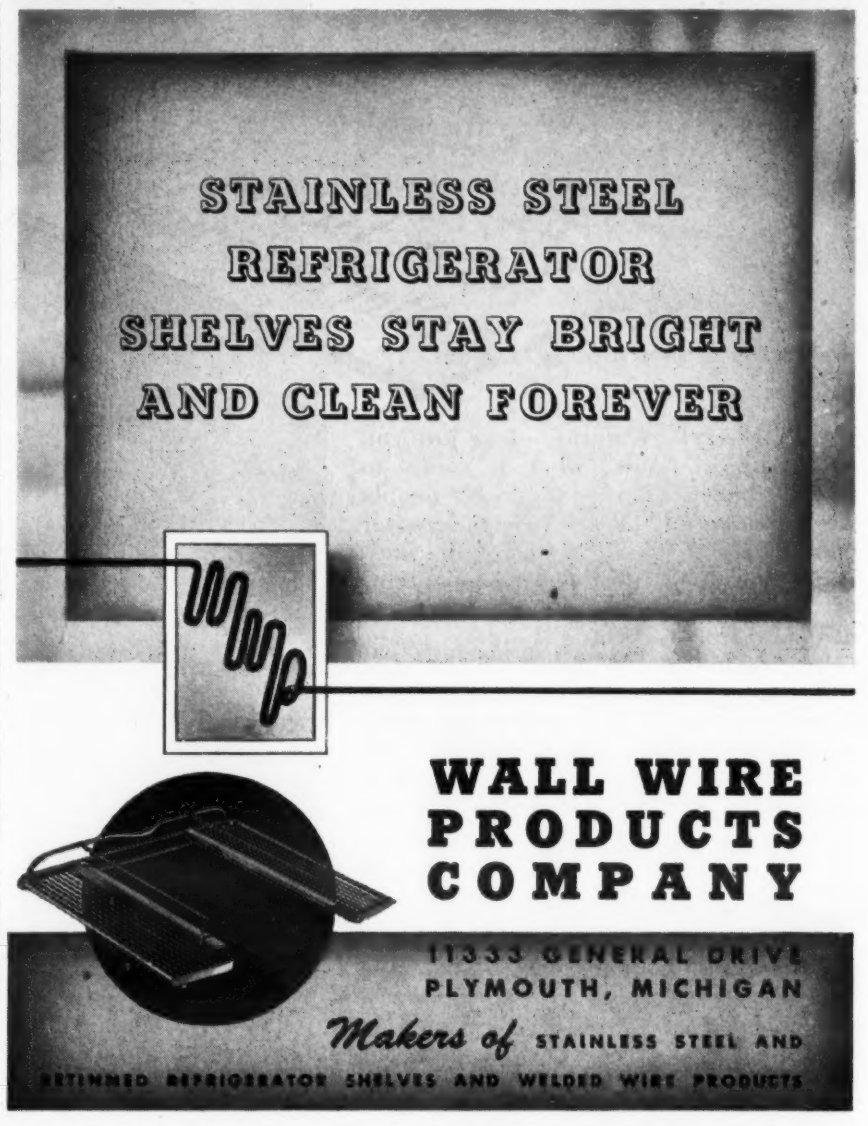
The queries included: New home or remodeling? If remodeling will it be entire home, or just kitchen? Do you have maid service? (Of those answering, 47% said yes.) Do you entertain extensively? moderately? Do you want, breakfast room? separate nook?

The questions brought out a clear picture of the requirements of the families giving the answers. Mr. Schafer noted that a surprisingly clear picture of the living needs of homes in the $10,000 class could be gained from the study. "Most of our studies have been aimed at low to moderate priced homes." These figures throw more light on the "quality" market than we have previously found available.

The complete answers to the 26 questions are shown in the accompanying table.

What Consumers Want in Their Kitchens

		Old Homes Per Cent	New Homes Per Cent
	Remodel complete home	13	..
	Remodel kitchen only	85	..
	Maid Service		
	Yes	47	52
	No	52	48
	Entertaining		
	Extensive	7	4
	Moderate	87	11
	Breakfast room separate	12	11
	Nook separate	49	46
	Snack bar separate	5	13
	No separate breakfast room wanted	28	26
	New equipment considered		
	Range	48	80
	Refrigerator	52	70
	Sink Dishwasher	43	54
	Disposall	51	59
	Under counter dishwasher	16	15
	Steel cabinets	81	80
	Cabinet sink	36	20
	Sink top—single bowl	5	4
	Sink top—double bowl	20	26
Voluntary Answers—Question not Included	Washer	5	9
	Dryer	5	4
	Ironer	1½	4
	Home Freezer	3	4
	Water Heater	3	..
	Present equipment to be used		
	Range	52	15
	Refrigerator	52	28
	Sink	9	..
	May doors or windows be re-located?		
	Yes	49	..
	No	44	..
	Builders chosen? (Question not on form)	66% volunteered information that they have chosen architects or builders.	
	Architect chosen? (Question not on form)		



For Profitable Postwar Appliance Merchandising
Look to the Pioneer

The first practical electric range, "granddaddy" of all Hotpoint products... was invented by George A. Hughes, late chairman of the board of Hotpoint.

FOR 40 YEARS

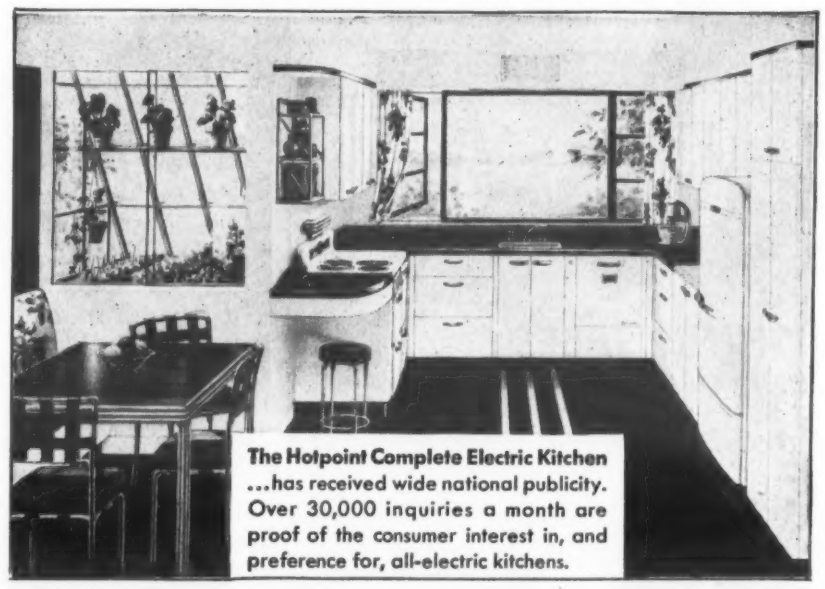
HOTPOINT has consistently lived up to the standard of *quality first.* Research and invention by skilled technicians resulted in Hotpoint leadership in the manufacture of electrical appliances. "Time-Tested" dependability for 40 years is your assurance that the Hotpoint products of tomorrow will not be "postwar babies." The all-electric kitchen is the scientific outgrowth of the first electric range.

AND TODAY

...after 40 years of progress Hotpoint offers you an opportunity to plan and build a retail appliance business, for the present and future, on a dignified and profitable basis through their selective dealer franchise plan—"a selective dealer for a specific market...a specific market for a selective dealer."

Edison General Electric Appliance Co., Inc.
5632 W. Taylor Street, Chicago 44, Illinois

Hotpoint Dependability Assured by 40 Years Experience



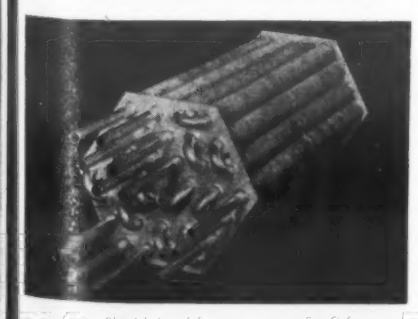
The Hotpoint Complete Electric Kitchen ...has received wide national publicity. Over 30,000 inquiries a month are proof of the consumer interest in, and preference for, all-electric kitchens.

HOTPOINT REGIONAL SALES OFFICES. EASTERN: 570 Lexington Avenue, New York City 22, Plaza 3-9333. SOUTHERN: 304 Red Rock Building, Atlanta 3, Walnut 2959. CENTRAL: 1456 Merchandise Mart, Chicago 54, Superior 1174. WESTERN: Western Merchandise Mart, 1355 Market Street, San Francisco 3, Underhill 2727.

HOTPOINT
Electric Kitchens

REFRIGERATORS • RANGES • WATER HEATERS • HOME FREEZERS • WASHERS AND IRONERS • CLOTHES DRYERS • DISHWASHERS • DISPOSALLS • CABINET-SINKS • STEEL CABINETS

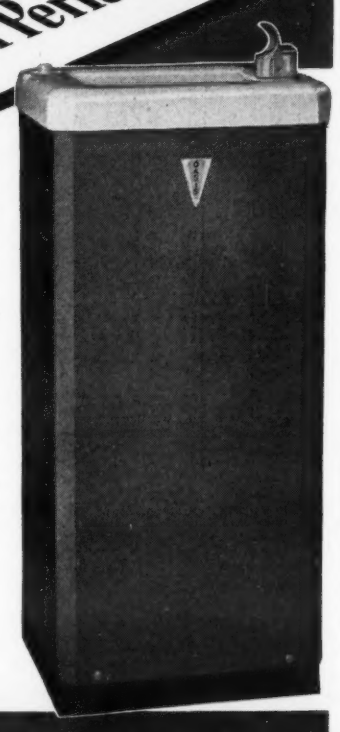
ROME-CONDENSER
★ Jointless Type ★



Rome Water Cooled Condenser Coils insure trouble-free condensing equipment. Used by leading compressor manufacturers.

ROME-TURNEY RADIATOR COMPANY
222 CANAL ST.
ROME, N. Y.

OASIS
Electric Water Coolers
Your Ticket for Better Performance



OASIS Electric Water Coolers put you "right up in front" when it comes to performance! They're made by people who *pioneered* in the electric water cooler field . . . built in one of the most fully equipped production-line plants of its kind in the country. You can always bank on Oasis Coolers to be ready instantly, 24 hours every day, with fresh, sanitary drinking water cooled to the most satisfactory temperature, and delivered "splash-free" at the most easily "drinkable" flow skilled engineering can devise. For the best in thirst-relief — for the most in low-cost, continuous performance—be sure they're OASIS Electric Water Coolers!

EBCO MANUFACTURING COMPANY
401 W. Town St., Columbus 8, Ohio

Survey Indicates Market Is Ready For Clothes Dryer

CHICAGO—A national survey recently reported here indicates that automatic clothes dryers already have an established postwar market.

Only a few clothes dryers had reached the prewar consumer market when the plants manufacturing them turned to war production. In spite of this limited presentation, of 7,000 families within one area of the survey, 23.6% want automatic clothes dryers after the war.

In comparison with this figure, 35% of the 7,000 families want automatic ironers, 44.2% want automatic washers.

Part of the survey included interviews with owners of the clothes dryers that were sold. Saving of labor and time are the appliance's chief appeals, it reported. Automatic shutoffs are a demand feature, with varied heat control for the safe drying of woolens also important among features the postwar consumer will look for.

Nelson Browning Opens Chillicothe Store

CHILLICOTHE, Ohio — Nelson Browning, formerly with Harrad Refrigeration Sales of Jackson, Mich., has organized Automatic Equipment Co. here, an appliance sales and service dealership.

Nash Celebrates Birthday-- With New Ranch Hands

Stars of the new Nash-Kelvinator radio show, the Andrews Sisters, helped Charles W. Nash, chairman of the board, celebrate his 81st birthday Jan. 28. After a broadcast he was honored at a party attended by George W. Mason. Left to right: Maxene, La Verne, and Patty Andrews, Mr. Nash, comedian "Gabby" Hayes, and Mrs. Nash.

Norge Dealers Express Feelings on Various Kinds of Promotion

DETROIT — While the average household appliance dealer is fully aware of the need for well-planned and comprehensive advertising and sales promotion plans, his most serious need apparently is in personal sales aids and sales training programs, it is indicated in results of a survey recently completed by the Norge Division, Borg-Warner Corp., manufacturer of refrigerators, gas and electric ranges, washing machines, and home heaters.

The survey was made among a representative, sample group of dealers from coast to coast to provide an advertising and promotion planning guide for the reconversion and postwar periods. Newspaper and national magazine advertising opinions were not solicited.

Given three choices of answers in every place where applicable, dealers indicated an overwhelming preference for a sales presentation manual or catalog (ring-binder type) with 326 stating they "must have," 86 replying "O.K., but not a must," and only four declaring them "useless." An almost equal number stated they preferred pocket-size catalogs and specification sheets. At the same time, an almost equal percentage showed they wanted training manuals for their salesmen.

In reply to other questions, dealers showed strong sympathy for premiums or extras (such as refrigerator dishes), recipe books, product demonstrations (cut-away of the "rollator" compressor demonstration model), outside neon signs, window displays, decalcomanias (for doors and windows), and interior floor displays and store backgrounds. On the general subject of displays, they voted 344 for "fewer displays *with* motion and light" against 97 for "more displays *without* motion or light."

Dealers were widely receptive to such newspaper advertising aids as mats, cuts, and stereos for their own ads, and complete newspaper ads in mat form, but were not too enthusiastic about recorded radio commercials or script for spot announcements.

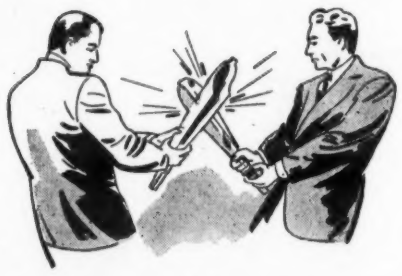
On the subject of outdoor advertising, 243 dealers favored it while 167 did not.

Solicited comment probably was as revealing of dealers' thinking as were the compiled results of the specific questions. Here again the need for sales training was stressed with typical remarks such as:

"Teach salespeople the mechanical workings of appliances. . . . Special sales training schools, locally, by factory-trained salesmen. Salesmen won't take the time to learn the details of merchandise."

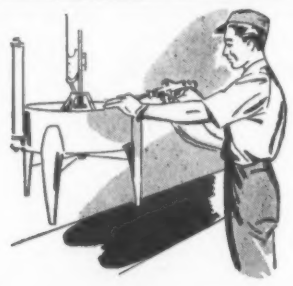
PROTECTION, BEAUTY and FASTER FINISHING SPEEDS

How a Polymerin Finish Gives You All Three!



PROTECTION! Impartial tests have proved Polymerin* 9 times harder to chip than ordinary enamels. Polymerin resists marring, humidity, heat, grease and other common deteriorants.

BEAUTY! A Polymerin finish adds to your product's "eye appeal". Polymerin is formulated in a full line of lasting colors, non-yellowing white and clear.



FINISHING SPEED! Polymerin is the original speed-bake finish. Baking speeds as low as 1 or 2 minutes help you to maintain fast production schedules and cut finishing costs.

"THE FACTS ON POLYMERIN"

"The Facts On Polymerin" gives, industry by industry, many examples of *how* and *why* Polymerin has been used by leading manufacturers. You will want this information before you plan the finish for your postwar products. Use the coupon below to send for a free copy of "The Facts On Polymerin" today. Regular Polymerin is not available now. But Polymerin-200, a new finish that can be handled exactly the same as regular Polymerin and which is comparable in flow, flexibility, durability and lustre, is giving very satisfactory results in many applications.

A&W POLYMERIN
The Original Speed-Bake Finish
AULT & WIBORG
DIVISION OF INTERCHEMICAL CORPORATION
*Reg. U. S. Pat. Off.

F-5
Ault & Wiborg
Division of Interchemical Corp., 350 Fifth Ave., New York 1, N. Y.
Please send, without obligation, a copy of "The Facts On Polymerin"—the booklet which gives, industry by industry, many examples of *how* and *why* Polymerin has been used by leading manufacturers.
*Name*_____
*Company*_____
*Address*_____
I am primarily interested in finishes for
☐ Current Use ☐ Postwar Use

Gilmer BELTS

Failure of a belt on air conditioning and refrigeration units is harmful to important war production. Be prepared to meet the demand for this type of replacement business by stocking rugged, long-lived, efficient Gilmer Belts. Gilmers are not only good-will builders . . . they are sure profit builders for you. Order a supply from your jobber now.

L. H. GILMER COMPANY
Tacony, Phila. 35, Pa.
Division of United States Rubber Company

TYLER FROZEN FOODS DISPLAY CASE— open, self service, wall-type!

TYLER'S TOPS

FOR PROFIT

YOU can go places with Tyler in the years ahead. The growing Tyler line meets today's — and tomorrow's — demand for self-service, frozen foods display, better design, better construction, better value! Write for complete-line catalog today! Tyler Fixture Corp., Niles, Michigan.

TYLER REFRIGERATION

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)

a deliberate journalistic prostitute. You do have rather a powerful way of mis-stating things. Have you ever thought of working for Hearst? There would be a fine combination: Pegler, Sokalsky, Kent, Junior, and Taubeneck. I don't know if Hearst uses him or not, but we mustn't omit Upton Close from such a fine collection of stinkers. Better consider it. Wm. Randolph would probably pay you enough to pay the interest on those election bet losses, were you honest enough to have actually made them.

"Another thing I admire about you is the fact that *everyone* agrees with your views, proof of which is that never have I seen a dissenting opinion published in your rag. But Oh! The numbers of agreeable ones.

"I have an uncle who owns a newspaper. He is nearly as self-satisfied and firm in his conviction that he alone is right; but I must say that he prints views other than his own occasionally. Often with editorial comment, of course.

"This industry needs a source of information such as you offer (at what a price) but, why not leave the political propaganda for the experts? Surely your small circulation cannot contribute much to the cause of fascism, in spite of your noble efforts. Or wouldn't the subsidizers buy space, without the 'bullitical' column?

"As you said in answer to my first letter, we can't all like the same things, but for gosh sakes give your readers credit for some intelligence.

"Now! I feel quite a lot better and, while I doubt if you read all of this, it's a relief to get it off my chest, and I'll sleep better.

"I am, not very respectfully,

DONALD L. NELSON"

Our Comment

It is perhaps only fitting to reply that Mr. Nelson also renewed his subscription.

How Mistakes Are Made

Another occupational hazard of the publishing business is that of getting a man's name wrong accidentally. It will happen in the best-regulated of editorial families.

It happened to us in the last issue. But Assistant Editor Ross Potter wrote so humorous a letter of apology that we hope everyone concerned will be mollified. We quote:

"Mr. R. L. C. Keith
"Kelvinator of Canada, Ltd.
"London, Ontario, Canada

"Dear Mr. Keith:

"In my profession the unforgivable sin is bungling a man's name. And that is what I have done to you.

"An article on the front page of our outgoing issue, Feb. 12, announces in 14 point Kabel extra bold type that C. W. Hadden is the new president of Kelvinator of Canada. The company's new secretary and treasurer, it says, is R. L. C. Smith.

"Friends of yours may question that, but a picture of you and Mr. Hadden on page 29 clinches it. You are R. L. C. Smith. The caption under the picture says so.

"I wrote the story in the first place, and an innocent comrade, Dale Mericle, took his captions from it. The paper went to press last night, some 9,000 copies of it. We'd still be ignorant and happy if a duplicate story hadn't come through this morning from another source. Dale checked it against our page 1 story, to segregate and file any new information the later release might have. The discrepancy hit him flat in the eye. He passed the bundle on to me, with an unkind comment.

"What began to bother me, after the first shock—you don't believe it at first, no matter what they say—was where in hell the name of Smith came from. I checked everything: 1. The original release from McKim said Keith, all the way. 2. I hadn't been working on another story with any Smiths in it. 3. Smith is not a name that is troubling my dreams (although it could now). So I wracked a small and corrugated brain. No Smith. And then a suspicion ballooned up! I took a look at the typewriter that has been staring me in the face day after day, night after night, years without end. And the typewriter is the dirty dirty that did it! It's an L. C. Smith.

"Ain't that something? No casual slip of the finger, but an insidious, creeping kind of thing. The same method of infiltration that makes those monotonous, repetitive jingles on the radio actually effective, according to the sponsors that use them. Some day, when you aren't looking, you'll find yourself asking for Pepsi-Squeal Breakfast Patties. It works!

"I thought you'd want to know there was nothing personal in replacing you with an old typewriter.

R. H. POTTER,
Editorial"

French Poker

Inasmuch as poker is overwhelmingly the favorite avocation of the refrigeration industry, many of you will be interested in this letter from Major A. S. Alter (brother of Harry and Irving) who is serving in France:

"Just a year since I went for overseas duty. All the many things that have happened took place in the short space of one year. It hardly seems possible.

"I'm still trying to keep up with the correspondence that was waiting for me on my return. Incoming mail has again been slow, so I may have a chance to catch up yet. In addition it has turned very cold or at least so for here. It was about zero this morning. It is a little discouraging on any desire to roam.

"I must take my laundry over today, but outside of that I don't intend leaving the building. I'll open a couple cans for my meals. There is no question in my mind but what a good hot bowl of Lipton's noodle soup will be better than mess. Our mess hall gets so cold that we have to eat fast to get our food down before it freezes. Eating with our cutlery is like trying to cut a piece of meat with an icicle.

"As usual I was in town over the week-end and had a pleasant time wandering around the village and drinking champagne with all the people I hadn't seen on my first return trip. I watched a poker game Saturday night which was a bit unusual. In the first place I never knew they played poker here. As a matter of fact, it is the pet game of the big shots around town and they not only play it regularly but they play for high stakes.

"I watched a four handed game where they took out the 2, 3, 4, and 5's in order to speed up the game. They have a few odd rules such as dealing and playing from right to left instead of as we do from left to right. A straight beats a flush and the dealer sets the opening value. Otherwise it is the same as a regular draw poker game. These fellows played until five in the morning for 10 straight hours. A pot was generally opened for 200 francs ($4) and raised to 1,000 francs ($20). Pots would run as high as three or four hundred dollars which is high for a four handed game. The big loser for the night lost 122,000 francs ($2,440) and paid his losses out of cash in his pocket. These boys all carry a lot of money in their jeans.

"The gay bloods also hunt a lot. The present sport is wild boar hunting. They were all out last Friday and killed 12 boars. Wild boar meat is delicious, particularly the way they cook it here. I have been invited to go hunting and will probably make it some time this week.

"The rumors—what is a camp without rumors—around here are that we move soon. I certainly hope so because I have seen all there is to see here. A change of scenery will do me good. There is a lot of France I haven't seen yet."

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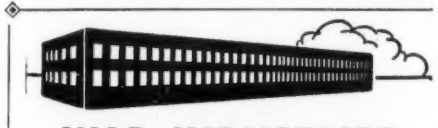
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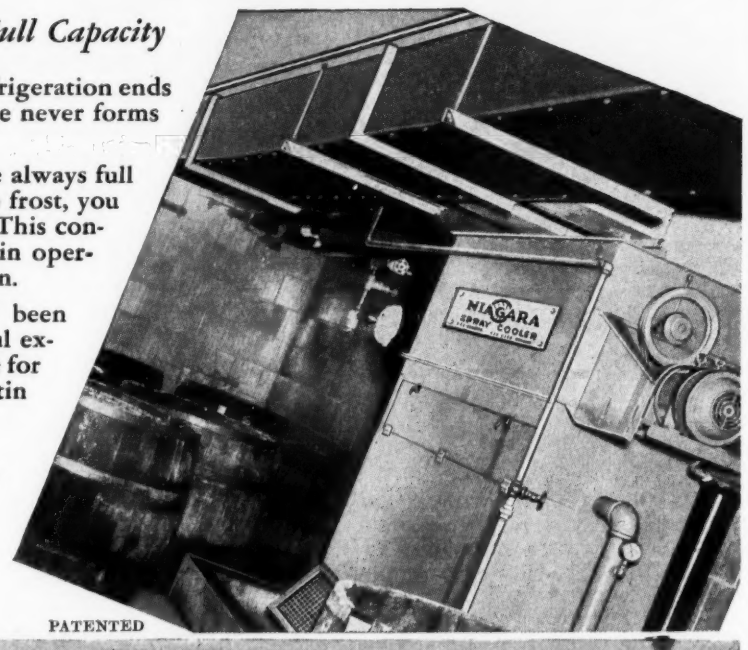

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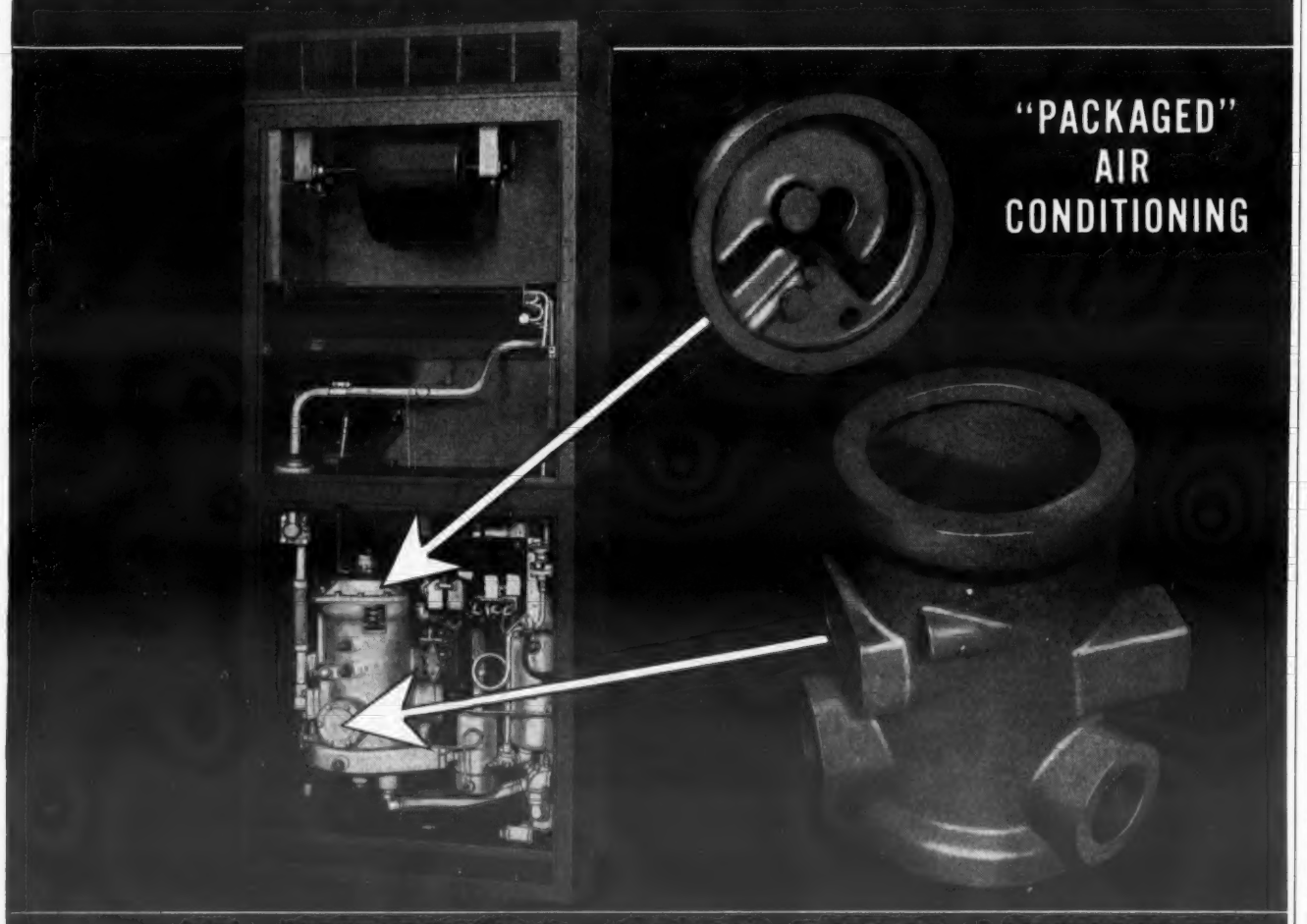

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HEATING • COOLING • REFRIGERATION

Architects' Problems May be Eased By Postwar Developments in New Air Conditioning Equipment

By C. Dale Mericle

NEW YORK CITY — Architects want simplified data on air conditioning; air conditioning men believe architects should call in consulting engineers when designing buildings to be air conditioned; postwar air conditioning units will be radically improved; electronic controls for air conditioning systems will be available after the war.

That, in brief, summarizes the panel discussion on air conditioning recently conducted here by the New York Chapter of the American Institute of Architects.

Participants included Charles Leopold, consulting engineer of Philadelphia; John Haines of Minneapolis Honeywell Regulator Co.; W. S. Galazzi of York Corp.; Alfred C. Buensod of Buensod-Stacey, Inc.; Joseph D. Weiss, industrial architect; and Kenneth K. Stowell, editor of *Architectural Record,* acting as moderator.

Editor's Note: Due to space limitations, this report of the panel discussion on air conditioning is incomplete. Comments of Charles Leopold and Alfred C. Buensod will appear in a future issue of the News.

Morris Sanders, head of the chapter's technical committee, was chairman of the meeting.

To start the discussion Mr. Weiss presented the architect's viewpoint:

"While we know that air conditioning will have more and more use, we do think that the public has been oversold. People expect too much for too little," he complained.

"And no air conditioning installation is satisfactory to all the people who are exposed to it. The reaction of different people to the same conditions seems to be quite varied, and that, we believe, is because in the usual air conditioning system there is no instrument to control effective temperature.

"As a matter of fact, we architects don't know of any instrument to control effective temperature. Is there such a device?" he queried. 'In effect, the so-called 'balancing' of a system which follows its installation is really a psychological problem rather than an engineering problem.

"Would it be possible," he continued, "to set up specification standards for air conditioning systems which would insure satisfactory installations?

"We also need good simple catalogs from the air conditioning equipment manufacturers on how to install these systems. Air conditioning is a complicated science and the catalogs now contain much lingo such as 'enthalpy,' 'entropy,' etc., which is strange to the outsider.

"We will also have to do much missionary work to overcome harmful effects of over-optimistic publicity that air conditioning has received," added Mr. Weiss. "It seems as if whenever the Sunday feature editor of a newspaper runs short of copy, he runs a story on air conditioning promising wonderful things for the postwar world.

"And one more problem for the air conditioning field: an architect's clients almost always ask first, 'Well, how much will air conditioning cost?'" concluded Mr. Weiss.

Cheaper and Better Package Units Predicted

Good news for buyers of postwar window and store type air conditioners was presented to the architects by Mr. Galazzi of York, who declared, "The postwar window unit will be very radically improved, and the larger size self-contained air conditioners will also be improved greatly and extended in capacity range in the postwar period, and prices will be reduced.

"Weights of the window type conditioners will be greatly reduced to make these units truly portable," predicted Mr. Galazzi. "A typical present-day ¾-hp. unit weighs about 250 lbs., which can hardly be considered portable. The postwar unit will be reduced to less than half this weight—to be achieved by use of light-weight metals. More compact designs will also reduce the physical dimensions.

"There will be a substantial reduction in power requirements by improvement in evaporator and condenser designs," he added. "Many present-day models suffer from skimpy evaporator and condenser surfaces.

"Better mechanical designs will reduce maintenance and increase life and reliability. Hermetically sealed type compressors will be used, eliminating leakage and belt problems. Better fan design and acoustical treatment will reduce noise level.

"Last and most important, there will be a very substantial reduction in cost," he predicted. "This will be accomplished primarily by vastly increased production, by reducing the number of different styles and sizes of units, and by improved designs. There must be a high production to make it possible to reduce cost, and cost must be low in order to make the units marketable on a large scale.

"The self-contained window type unit is particularly adapted for use in existing buildings, houses, and small offices," Mr. Galazzi told the architects. "The principal advantages are low cost and simplicity of installation and removal."

Similar improvements are due for the postwar large size self-contained conditioner, according to Mr. Galazzi. These units will also be reduced to about 50 or 60% of present weight and the physical size will likewise be cut down. Mechanical designs will be improved to reduce maintenance to a minimum, while there will be a general increase in capacity coverage from the present general maximum of 180,000 B.t.u./hr. to about 360,000 B.t.u./hr., he said.

"In the past there has been con-

(Concluded on Page 11, Column 1)

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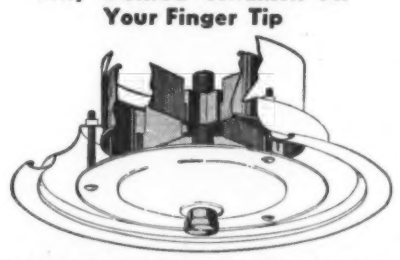

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Improvements In Products Seen as Boon To Architects Planning Conditioning

(Concluded from Page 10, Column 5)

siderable confusion caused by differences among various manufacturers in methods of testing and presenting ratings," admitted Mr. Galazzi. "A particularly misleading method of designating unit capacity is by use of the compressor motor horsepower because it can readily happen that one manufacturer's 2-hp. unit, for example, would have the same cooling capacity as another's 3-hp. unit.

"This situation is being rapidly corrected by the A.C.R.M.A. standards and the A.S.R.E. test code, which define standards of design and establish uniform methods of testing. The air conditioning industry is becoming more stabilized, so that in the future there will not be tremendous differences between various leading manufacturers in types and performance, as frequently occurred in the early days of air conditioning," he opined.

"Regarding the future of air conditioning for human comfort, it will pretty much depend upon the economic prosperity of the nation, because this is definitely a luxury item," he declared. "Baring an unexpected economic collapse, the future will unquestionably bring radical improvement in designs and greatly reduced costs.

"It appears to me that new home construction, which should be due for a tremendous postwar expansion, offers great possibilities for incorporating a simple, inexpensive combination heating, cooling, air circulating, and filtering system," he added.

"To make this possible, the house must be well insulated and tight; and a simple, low cost air distribution system must be worked out. A well insulated structure will reduce the cooling load and make it possible to use a small inexpensive cooling unit. This would be a self-contained unit which can readily be incorporated into the heating system.

"Household air conditioners will be developed in the range of capacities of approximately 18,000 to 36,000 B.t.u./hr. capacities," he predicted. "Thus, the air cooling feature can be incorporated relatively inexpensively if it is integrated with the structure design. Architects must consider the use of more and cheaper insulating materials, permanently sealed double windows, prefabricated ducts, etc."

Electronic Controls Are Sure to Come

Vast improvements in the field of controlling air conditioning systems through use of electronic control devices were predicted by John E. Haines of Minneapolis-Honeywell. Extreme sensitivity, ability to "average" the conditions in the conditioned space, and improved appearance, all can be had with electronic air conditioning controls, and with comparatively little increase in cost, according to Mr. Haines.

"Any discussion on automatic controls should begin with a review of the major purposes for the use of automatic controls, because even those of us who are working with control equipment almost constantly often forget some of them," he said.

"There are five major reasons for the use of automatic controls when they are applied to almost any type of air conditioning system: comfort, convenience, safety, economy, and the elimination of human error. And there are two general types of control systems in common use today: two position (simple on-off controls) and modulating (providing a number of intermediate positions between the completely on and off positions of valves, dampers, etc.).

"The selection of the proper control is not as simple as most people believe if the best results are to be obtained from any heating or air conditioning system.

"All practical engineering is a compromise between the best obtainable and cost," he explained. "The fact that low cost is a very important factor in domestic air conditioning makes the selection of the control equipment considerably more difficult than for commercial heating or air conditioning.

"A unit air conditioner, for example, if properly controlled would require as many controls as a central conditioner," he declared. "But the unit conditioner will not usually support the cost of a complete and adequate control system—and yet the selection of simple and inexpensive two-position controls may provide for wide fluctuation in temperatures and humidities which may eliminate most of the comfort for which the conditioner is intended.

"A central conditioner will normally support the cost of an adequate control system—yet there is a tendency on the part of engineers and manufacturers to either use an insufficient number of controls to provide reasonably good results, or to attempt to do too much with controls with the result that the control system becomes too complicated for the average service man to understand and too costly in comparison to the total cost of the conditioning system."

As for the future, the greatest improvement will result from the use of electronics, "and the possibilities look very good," declared Mr. Haines.

"For the past four years, we have been experimenting with the use of electronics for the control of air conditioning. Our experimental work has indicated that electronics have many advantages which applied to the control of air conditioning.

"One of the major advantages is the accuracy of control which can be obtained. An electronic thermostat or temperature controller eliminates a major portion of the mass of the present types of thermostats and controllers with which you are familiar—and at the same time the exposed area of the thermostatic element is increased. Present thermostats have as little mass as possible to produce the power necessary to complete a contact or perform other functions. . . .

"We normally speak of volts, amperes, and ohms in the application of present-day controls, but in electronics, we measure micro-volts, micro-amperes, etc. A micro-volt is one-millionth of a volt. These minute signals are increased in intensity to usable values by amplifiers.

"In the same way we talk about an operating differential of 2°, or plus or minus 1° from the control point in present-day controls—while the use of electronic equipment permits differentials as low as five-hundredths or 1/20 of a degree when this is desirable. A practical minimum is probably 1/4°.

"Since an electronic thermostat or temperature controller can use a small source of voltage such as the thermocouple or the voltage drop through a resistance coil, all electric contacts and moving parts are eliminated in the controller. The electronic system merely measures the minute change in value of the resistance of the coil of wire due to temperature variations. All of these minute changes can then be amplified in the electronic tube as much as 200,000 times, and can also be subjected to proper manual adjustment or calibration," explained Mr. Haines.

"It appears that the electronic system of the future will be considerably less complicated than the modern radio. In addition, the design of electronic control equipment will permit the air conditioning service man to locate trouble and correct it through replacement of sub-assemblies. This is typical of the design of electronic equipment for aircraft. The service man need not be an expert in electronics."

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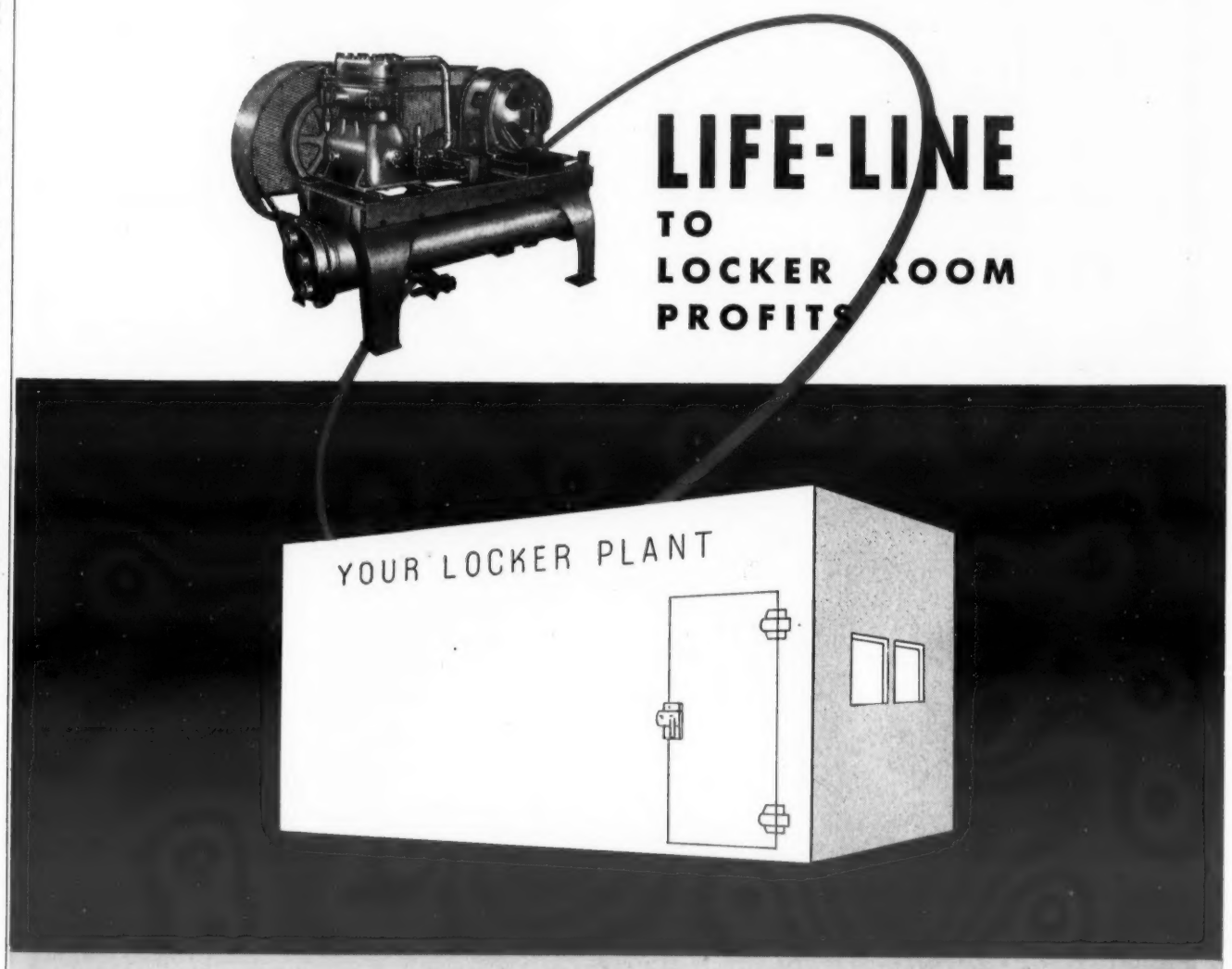

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Off the Chest

CHAIN SERVICE SHOPS TO MENACE INDEPENDENTS?

National Appliance Service
4231 Ninth St., N.W.
Washington 11, D .C.

Editor:

I read E. A. Summer's letter in the Jan. 15 issue with great interest. "He took the words right out of my mouth"—and I would like to say something to E. A. on 'inde.'

All of us independents who have put in long hours, hard work, and have kept records of the individual job, customer and their appliance-wants, etc.—and have had to deal with all kinds of restrictions during these war years, HOPE that after the war we won't be forgotten by the manufacturers.

But let's stop kidding ourselves—Money Still Talks! Personally, I visualize the coming of the Chain Store Service Shops—owned and controlled by these same manufacturers from whom we "beg" postwar recognition. You can't stop big business! You, my friend, will either be absorbed by them as a Service Manager or as just a plain mechanic, and if that doesn't suit you, then—out in the cold again!—UNLESS you have the capital to buck up against these Industrial Giants as an independent!

But please don't get me wrong. I'm not kicking, mind you. You say it "would be good sportsmanship on the part of the manufacturer to give an ear to the logical people (Service Men) who could give them information that would be of utmost value in the approaching period—and I do agree with you.

But, basing it on prewar experience of this war and postwar experience of the last one, the only sportsmanship you will get out of BIG BUSINESS is that we all agree to stay closed on Sundays! Yes, you will play ball with them, not vice versa!

Your experience and your knowledge will be utilized by them until your "Sales Territory" is dry—and then what?—Period—A very quiet one for you, at that.

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1. The Manufacturer—Production of Appliance.
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M. G. HORWITZ

'MIKE' SWEENEY ON THE RETURNING VETERAN

General Electric Co.
Bridgeport, Conn.

Editor:

An extended trip on business got me behind in my reading; hence, it was only today that I got a chance to read your Jan. 29 editorial commenting on Harry Phillips' letter reference *good* jobs for ex-servicemen.

He has hit upon a very serious point and we are well aware of what is in his mind.

We can say that in our case we have *reserved* every job that a present serviceman had with us. These jobs are open and will remain so until this awful war is over. What's more we are definitely committed to a plan of keeping other places open for "up graded" employes who left smaller jobs with us, but whose years in service have made them eligible for something better.

We do not intend to have "our boys" come back only to find that fellows who were more fortunate and could stay at home have all the good jobs. We are doing as much as you are; namely, filling in with anyone available to get the work done which must be done now and waiting and praying for the return of those who left us to fight for those who stayed home.

Let's hope it won't be too long now before we can greet all our fine soldiers, sailors, and air corps men with a cigar, a good job, and plenty of kind thanks for the job they did for us.

A. M. SWEENEY,
Manager of Sales,
Major Appliances

'FOR THE RECORD' ON 'FRIGID FREEZE' IDEA

Refrigeration Corp. of America
241 West 64th St.
New York 23, N. Y.

Editor:

In view of the express fair policy of AIR CONDITIONING & REFRIGERATION NEWS of printing all facts pertaining to new developments of the refrigeration industry, we are taking this opportunity to outline the background and development work relating to our "Frigid Freeze" automatic frozen food dispenser.

This letter is not written to AIR CONDITIONING & REFRIGERATION NEWS for the purpose of having them arbitrate any disputes or differences of opinion, however, as our old friend, Al Smith, would say—"Let's look at the record."

The "Frigid Freeze" automatic frozen food dispenser was conceived by our president, John Bess, back in 1940 when we were actively engaged in the sale of the so-called blind type frozen food cabinets to thousands of retail stores, super-markets, etc.

The presently developed automatic frozen food dispensing unit, as it pertains to refrigeration, automatic dispensing arrangement, etc., is the result of research work of our complete engineering department.

There is no one part of our "Frigid Freeze" dispensing unit that was developed by any one individual—either presently connected with the corporation or who had previously been connected with us.

We write this letter in view of the letter that appeared in your Jan. 29 issue, over the signature of Charles Davies. For the benefit of your readers and in order to keep the records straight, Charles Davies of the Davies Air Filter Corp., manufactures of registers, grilles, air filters and dust collectors, developed no part of our present self-service frozen food dispensing unit.

Mr. Davies was originally and solely engaged by us for the purpose of redesigning our postwar home and farm freezer cabinets, strictly from a cabinet angle, as Mr. Davies to the best of our knowledge had no previous experience with low temperature refrigeration applications. The design of any of our present or past products was never contemplated or contributed to by Mr. Davies.

At the time our association with Mr. Davies terminated, the "Frigid Freeze" automatic dispensing unit was strictly in the preliminary blueprint stage, making it utterly impossible to reach any of the conclusions as expressed by Mr. Davies in your publication.

HARRY FARBER,
Vice President

'STAY ON OWN SIDE' HE TELLS AUTO DEALERS

Automatic Equipment Co.
622 Main St.
Peoria 2, Ill.

Editor:

In your Jan. 29 issue you have an article headed, "Auto Dealers Apparently see Green Pastures in Appliances."

We feel that manufacturers and jobbers should not permit electrical appliances to be handled or sold by auto dealers.

In postwar days the auto dealers will have new cars, parts, accessories and repair service to sell and should not be encouraged to sell outside items, other than pertaining to their own type and kind of business.

It wouldn't be fair or equitable to the appliance dealers and should not be tolerated.

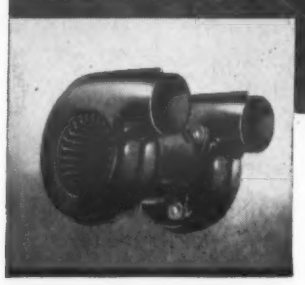
We hope to see an expression regarding this matter, in an early issue of AIR CONDITIONING & REFRIGERATION NEWS.

R. C. TATE

RELIABLE
POWER FOR SMALL FANS AND BLOWERS

TYPE "L" MICROMOTOR DIAMETER IS 3 3/32"

Redmond
SHADED POLE A. C.
MICROMOTORS



Efficient Redmond blowers for use with Micromotors are supplied for a wide variety of applications.

DEMAND trouble-free performance in the small motors you buy. Demand reliability.

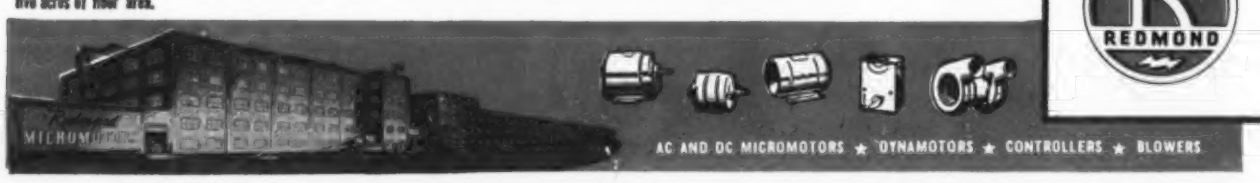
You can rely on the sound engineering in Redmond Micromotors. You can rely on their quiet smooth operation, built-in uniformity and long life lubrication. And you can bet that when a Redmond engineer specifies a Micromotor for your particular application your job is being handled right. *Get in touch with Redmond now and get the details.*

Illustrated above are AC Type "L" Micromotors built in sizes up to 1/40th horsepower. Many other types of Micromotors are available.

A. G. Redmond Company
OWOSSO, MICHIGAN, U. S. A.

REDMOND KNOWS MOTORS
R
REDMOND

Composite view of Redmond facilities with over five acres of floor area.



AC AND DC MICROMOTORS ★ DYNAMOTORS ★ CONTROLLERS ★ BLOWERS

ANSUL

ST IN REFRIGERANTS

Ansul was first in America to produce Sulfur Dioxide for refrigeration (1915).

At the demand of the growing fractional-tonnage household refrigeration industry, Ansul began production of Methyl Chloride.

Ansul still analyzes *individually* every cylinder before it is shipped because—

LIQUID Sulfur Dioxide BY ANSUL*

LIQUID Methyl Chloride BY ANSUL*

The purity, dryness, and safety of handling of Ansul refrigerants are still top standards of a high-specification industry which Ansul is proud to have pioneered.

*REG. U. S. PAT. OFF.

ANSUL CHEMICAL COMPANY
"NOW IN OUR 30TH YEAR"
MARINETTE, WISCONSIN
AGENTS FOR KINETIC'S "FREON-11," "FREON-12" AND "FREON-22"

Off the Chest

ASTOUNDED BY REA ELECTRIC COST FIGURES

Westinghouse Electric & Mfg. Co.
653 Page Blvd.
Springfield 2, Mass.

Editor:

In your Jan. 8 issue, second page, I was considerably staggered by a couple of statements made by Teare of R.E.A. as follows:

"Monthly payments are not practical, he stated, because farmers' income most often is realized in lump sums a few times a year. Most of them operate on an actually small cash income, Mr. Teare added. The cost of electric current alone for a fully electrified farm home can take up to a third of the average farmer's actual cash income."

It is true that farmers, other than dairy farmers, do have irregular income periods, but, according to an analysis I have made from available data, there are nearly 650,000 *electrified dairy* farms, having *five or more cows* and an annual value of farm products sold, traded, or used of *over* $750. That, in itself, is no mean shakes as a farm freezer market and I am pretty sure that the most of those those fellows get a milk check (and a subsidy check, too) as regular as any salaried worker.

Furthermore, I just cannot believe that the *average* farmer, with an all-electric farm, would spend *one third* of his annual cash income for the cost of electricity to operate his farm, as Teare claims.

I don't know why I should argue with Mr. Teare, who has unlimited resources at hand to learn the facts but, if he is correct, our Rural Electrification endeavors are doomed to a pretty dismal future.

I believe you should make every effort to get the facts on this and give our industry a break by publishing them. Either Teare is wrong or we have a tough row to hoe.

L. W. CLIFFORD,
Sales Development Supervisor,
Refrigeration Specialties Dept.

CHALLENGES REA FIGURES WITH PRACTICAL DATA

Rural Electric Information Exchange
New York City

Editor:

One day last week L. W. Clifford of Westinghouse was in the office and we were discussing the statement in your January issue by Dan Teare of REA. Cliff sent me a copy of his letter to you of Jan. 24.

I want to comment on that part of Mr. Teare's statement which reads as follows:

"The cost of electric current alone for a fully electrified *farm home* can take up to a third of the average farmer's actual cash income."

I am sure that this statement cannot be substantiated.

I am going to give you one actual case which I think would be typical as to costs. These records were kept for five years by one of the large utility companies on a 180 acre farm in New York State. Every one of the uses was metered on a special meter. The following is the rate schedule which was in use in determining these costs:

First	12 kwh per month	$1.50
Next	48 kwh per month	4½¢ per kwh
Next	140 kwh per month	2½¢ per kwh
Over	200 kwh per month	1½¢ per kwh

These rates are not far out of line with the average kwh rates on farms east of the 100th meridian in 1943. This rate was $3.75 and the average annual bill was $55.54. This farm on which I am giving you records is a splendid example that the more current used, the lower becomes the average rate.

The following is a list of the appliances used in this home: lighting and principal small appliances, electric range, refrigerator, water heater, washer, ironer, and radio.

The average monthly kwh consumption was 638. The total annual consumption in the home was 7,650 kwh and the total cost was $133.34—an average of 1.744¢ per kwh.

When we consider that the average income per farm in 1943 was $3,268, and that there were only two States in the United States where the income was less than $1,200, we can see that ⅓ of the farmer's cash income is not required to pay his electric bill.

In addition to the consumption of electricity in the home, this farm also used 7,276 kwh in their poultry house; 5,286 in the dairy; and 228 kwh for a portable motor. The total bill for these uses for the year was $356.50—including both farm and home. You can see that a greater use was made of electric service outside of the home than in the home.

The saving in labor effected by the use of electricity, both in the home and on the farm, was far greater than the total electric bill. This labor was released for other productive work on the farm and in the home. We shall have made a long step forward in farm electrification when we begin to look at electricity not from the standpoint of how much it costs but what it produces.

The publication of material which, to say the least, is misleading will be a deterring rather than a helpful factor to farm electricfication.

FRANK E. WATTS,
Director

'STAY IN THERE AND PITCH'

5227 Highland Ave.
Kansas City 4, Mo.

Editor:

Perhaps just a little late but, as usual, I watch for your editorials and comments, and the editorial in the issue of Dec. 4, 1944, "C.I.O. Prepares To Take Over The Country," was and is most timely—especially in view of developments now in progress in Washington.

May I compliment you on the clear, concise expressing of the situation and the accuracy of the subject matter. When dealing with Mass Psychology, a lot can happen in a very short time, and the old adage, "We do on impulse what we have trained ourselves to do by thought," is not entirely out of date, and the possibilities of your training a line of thought on which action might be taken very quickly by those who are watching and doing some thinking is surely commendable.

So long as we can continue to have the "freedom of the press" and editors who can express themselves in plain English—with the turn in the lane which is bound to come, here's more power to you, so stay in there and pitch.

EARL G. MORGAN

'SORROW NOT'

18 Blossom St.
Keene, N. H.

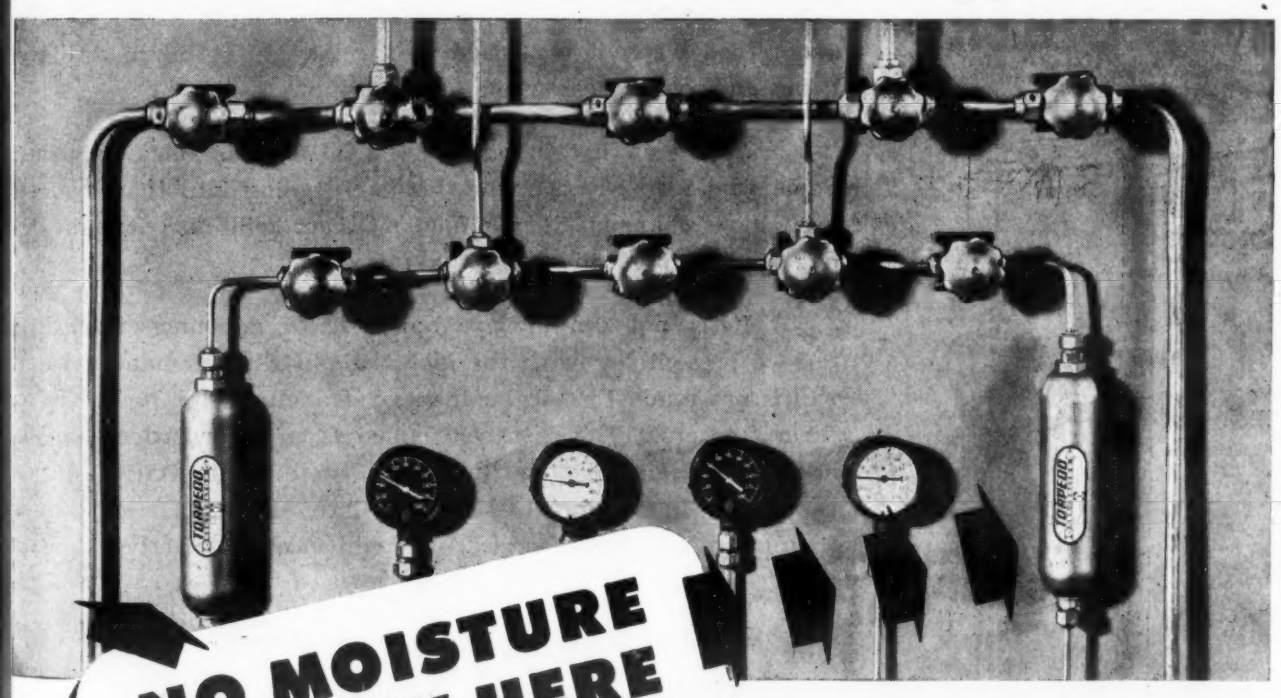
Editor:

Your column, "Inside Dope," in the Jan. 1 issue of the NEWS struck a responsive cord. Could I but express my sympathy, however, this letter would be poor consolation. The hope for a brighter, happier future that I wish to convey to you is that expressed in Holy Writ and introduced by the words:

"But I would not have you to be ignorant, brethren, concerning them which are asleep, that ye sorrow not, even as others which have no hope."

Read the rest of this comforting promise for yourself in the First Epistle to the Thessalonians, chapter four, verses thirteen to eighteen.

KENNETH F. MOORE



NO MOISTURE GETS BY HERE

Unique multiple installation uses Imperial Torpedo Dehydrators

IMPERIAL TORPEDO DEHYDRATOR
Your best weapon in the war on moisture

- One piece streamlined shell.
- Fewer joints—no soft solder—less chance of leakage.
- Copper and brass construction.
- Packed with "Silica Gel".

PROBLEM: The operator wanted a multiple refrigeration system that would give him the utmost efficiency at all times and would safeguard him in the event a condensing unit failed to operate.

SOLUTION: The unique multiple installation shown above, utilizing a by-pass and two compressors, was the answer. In this system, should one of the condensing units fail, both coolers can be run temporarily with the other unit.

Two Imperial Torpedo Dehydrators, one on each high-side line, were installed in the system to safeguard against moisture in the refrigerant and to provide further assurance of trouble-free operation.

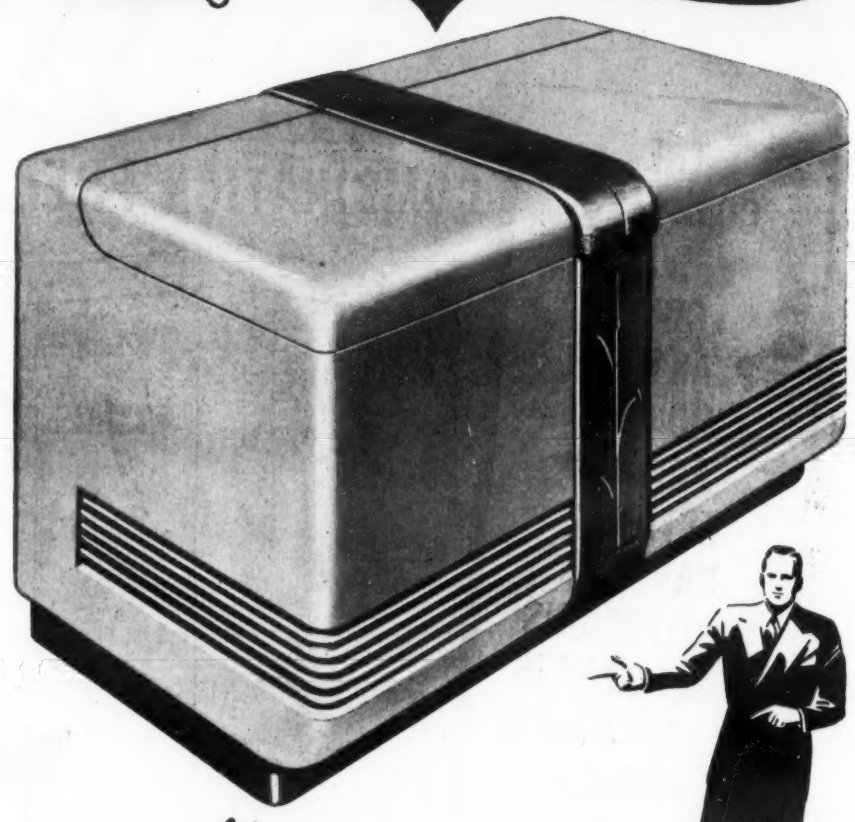
Imperial Fittings and Valves add to the overall dependability.

THE IMPERIAL BRASS MANUFACTURING COMPANY, 565 S. Racine Ave., Chicago 7, Ill.

IMPERIAL

FITTINGS • VALVES • DEHYDRATORS • FILTERS • FLOATS • CHARGING LINES
TOOLS FOR CUTTING, FLARING, BENDING, COILING, PINCH OFF AND SWEDGING

HERE'S YOUR FUTURE'S MOST PROFITABLE *Sales Leader*



THE *New* BEN-HUR FARM and HOME *Freezer*

HOME FREEZERS promise you a future market conservatively estimated at 500,000 units a year! BEN-HUR will be ready to open this profitable market for YOU . . . with the new BEN-HUR FARM and HOME FREEZER.

Already laboratory tested, and proved under every possible operating condition — the product of famous artist designers and experienced refrigeration engineers, BEN-HUR FARM-HOME FREEZERS will be available in sizes for every family's need . . . a *complete* line that will suit every home.

Check your community now in both farm and urban homes. You'll find ready *demand* for the recognized advantages of home freezing and frozen storage — a waiting market that you can serve profitably with BEN-HUR FARM-HOME FREEZERS.

BEN-HUR distributors are being appointed *now.* Be sure you get in on the ground floor, write for details today.

BEN-HUR MANUFACTURING CO.
634 East Keefe Avenue Milwaukee 12, Wisconsin

BEN-HUR FARM LOCKER PLANTS

They'll Do It Every Time . . . . By Jimmy Hatlo

NEVER MIND THE BACK LIP. I DO THE TALKIN' AROUND HERE. JUST SEE YOU DO IT THAT WAY AFTER THIS!
☆☆@#!!☆☆ I ALMOST LET HIM HAVE IT THAT TIME. I ALMOST LET HIM HAVE IT. IF HE'D A SAID JUST ONE WORD MORE- JUST ONE WORD MORE- SMACKO! I'D HAVE SOCKED HIM RIGHT ON THE JAW.
THAT'S IT, KID, THAT'S IT NOW POLISH HIM OFF WIT' YOUR LEFT. HE'S DOWN! HE'S UP! HE'S DOWN—
JUST ONE MORE WORD WHAT DOES HE WANT? THE BOSS CALLED HIM ENOUGH NAMES TODAY TO START A NEW DICTIONARY
OLD MUMBLIN' MORTIMER. HE'S BEEN SHADOW-BOXIN' THE BOSS FOR THE LAST TEN YEARS.
EVEN IF HE EVER GOT THE NERVE, HE COULDN'T HANG A SOCK ON A BEDPOST.
HEARING ABOUT THE SOCK THAT'S GOING TO KNOCK THE STRAW-BOSS COCK-EYED —
Thanx to J M. REILLY WASHINGTON, D.C.
JIMMY HATLO
10-11
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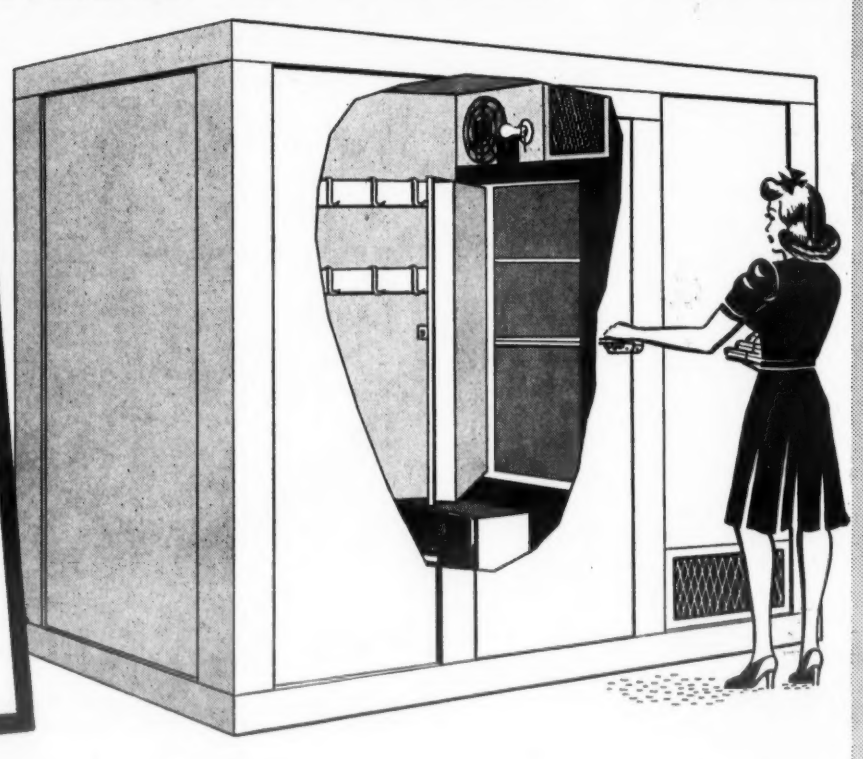
Back the Attack - - - - - Buy War Bonds

amana

COMBINATION FREEZER • COOLER

THE COMPLETE PRIVATE LOCKER PLANT FOR HOMES FARMS ESTATES RANCHES INSTITUTIONS FOOD STORES RESTAURANTS HOTELS RESORTS CAMPS



A GREAT DEMAND IS WAITING . . . .

Here's a new Refrigeration Unit that satisfies a nation-wide demand. It's a large-capacity, sharp-freezer and frozen food storage Cabinet combined with a general purpose Walk-In Cooler. A complete private Locker Plant with 23 cu. ft. of frozen food storage space (capacity about 19 bushels of frozen food) and 140 cu. ft. of 38° storage space. Sectional construction . . . simple to erect any place. Size 8'0" long x 4'0" wide x 6'10" high. Engineered and built by Amana . . . pioneers in the construction of successful commercial Locker Plants. Unlimited sales possibilities. Get complete facts.

REFRIGERATION DIVISION

AMANA SOCIETY, AMANA, IOWA

AMANA HOME FREEZERS

MODEL 50 . . . Storage space for 4 bushels of frozen foods. Compact, convenient.

MODEL 80 . . . 9 cu. ft. New exclusive top opening for easy access to frozen foods. No waste space . . . no inaccessible areas.

Trade Mark registered U. S. Patent Office; Est. 1926

Air Conditioning & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

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Member, Audit Bureau of Circulations. Member, Associated Business Papers.

VOLUME 44, NO. 9, SERIAL NO. 832, FEBRUARY 26, 1945

Home & Farm Freezer List As of 5 p. m. Yesterday

ETHEL BARRYMORE, when tired of taking curtain calls at the end of a performance, used to come out and say: "That's all there is; there isn't any more." She didn't mean that the play wouldn't be put on any more; she meant "that's all there is for now."

Inasmuch as this was probably the most Famous Last Line in theatrical history, we didn't believe it would be misunderstood when it was used at the tag-end of our last list of home and farm freezer manufacturers.

Any such list is out-of-date as soon as it is published. Some who formerly thought they were going into that business may have changed their minds. Others will have caught the bug and decided to enjoy the fever.

It is not our policy, however, to announce *intentions*. So, we present herewith the *last available* list of manufacturers which are ready to talk business on franchises for home and/or farm freezers. This list was culled from information supplied on questionnaires returned to us. By the time you read this, the list will undoubtedly be out-of-date, because 20 more questionnaires and 500 more "tips" will probably arrive in next week's mail.

But here they are, in alphabetical order:

Admiral Corp., 3800 Cortland Ave., Chicago, Ill.; Amana Society, Amana, Iowa; American Refrigerator & Machine, Inc., 615 Third St., N. Minneapolis, Minn.; Ben-Hur Mfg. Co., 634 Keefe Ave., Milwaukee 12, Wis.; Carrier Corp., 300 So. Geddes St., Syracuse 1, N. Y.; Coolerator Co., Duluth, Minn.; Crosley Corp., Cincinnati 25, Ohio; Deepfreeze Division, Motor Products Corp., 2301 Davis St., North Chicago, Ill.; Edison General Electric Appliance Co., 5600 Taylor St., Chicago 44, Ill.; Esco Cabinet Co., Esco Bldg., West Chester, Pa.; Fogel Refrigerator Co., Eadom & Kennedy Sts., Philadelphia 37, Pa.; Ed Friedrich, Inc., 1117 E. Commerce St., San Antonio, Tex.; Frigidaire Division, General Motors Corp., Dayton, Ohio; General Electric Co., 1285 Boston Ave., Bridgeport, Conn.; C. V. Hill & Co., Inc., Trenton, N. J.; International Harvester Co., Chicago, Ill.; Jewett Refrigerator Co., 2 Letchworth St., Buffalo 13, N. Y.; Jordan Refrigerator Co., 235 N. Broad St., Philadelphia 7, Pa.; Kelvinator Division, Nash-Kelvinator Corp., 14250 Plymouth Rd., Detroit 32, Mich.; Norge Division, Borg-Warner Corp., 680 E. Woodbridge St., Detroit 26, Mich.; Philco Corp., Tioga & C. Sts., Philadelphia 34, Pa.; Portable Elevator Mfg. Co., Bloomington, Ill.; Quillen Bros. Refrigeration Co., 1639 Lafayette Rd., Indianapolis 8, Ind.; Radiant Fuel Co., 1211 Oakwood Ave., Toledo, Ohio; Refrigeration Corp. of America, 241 W. 64th St., New York 23, N. Y.; Robbins & Burke, Inc., 29 Landsdowne St., Cambridge 39, Mass.; Sanitary Refrigerator Corp., Fond du Lac, Wis.; Savage Arms Corp., Turner St., Utica 1, N. Y.; Schaefer, Inc., 801 Washington Ave., Minneapolis 1, Minn.; Seeger Refrigerator Co., Arcade & Wells Sts., St. Paul, Minn.; Sherer-Gillett, Inc., Marshall, Mich.; Emil Steinhorst & Sons, Inc., 612 S. St., Utica, N. Y.; Stoddard Mfg. Co., Mason City, Iowa; Victor Products Corp., Hagerstown, Md.; Weber Showcase & Fixture Co., 5700 Avalon Blvd., Los Angeles 54, Calif.; Westinghouse Electric & Mfg. Co., E. Springfield, Mass.; Wilson Cabinet Co., Smyrna, Del.

You can talk turkey with any of these concerns. And they all have excellent reputations as manufacturers of quality products.

Revisions of this list will follow from time to time in subsequent issues of AIR CONDITIONING & REFRIGERATION NEWS.

Dependability doesn't happen...

IT'S *BUILT INTO EVERY* A-P VALVE

Ideal...

FOR SMALL UNIT REFRIGERATION MANUFACTURERS

● For close coil regulation and steady, dependable performance, use this "A-P" Model 206 Thermostatic Expansion Valve. Factory-set at your desired superheat setting, no field adjustments are required, and the valve remains tamper-proof. Built under rigid factory inspection—with all parts microscopically examined and thoroughly tested during and after fabrication. Install Model 206 with full confidence in any application where the superheat setting has been predetermined.

Wherever a non-adjustable expansion valve is required, or preferred, the A-P Model 206 is best. Absolutely reliable and dependable, it maintains a constant superheat over a wide range of evaporator temperatures — a real advantage in this type of valve. Its maximum capacity—0.61 tons Freon; 1.32 tons Methyl or Sulphur.

NOTE THESE FEATURES

- ★ Liquid cross-charged for maximum efficiency
- ★ Three orifice sizes
- ★ Built-in Strainer 1.23 sq. in.
- ★ Small size for hard-to-get-at applications
- ★ Factory-set superheat 10 degrees; 5 to 15 degree available range
- ★ Free acting diaphragm

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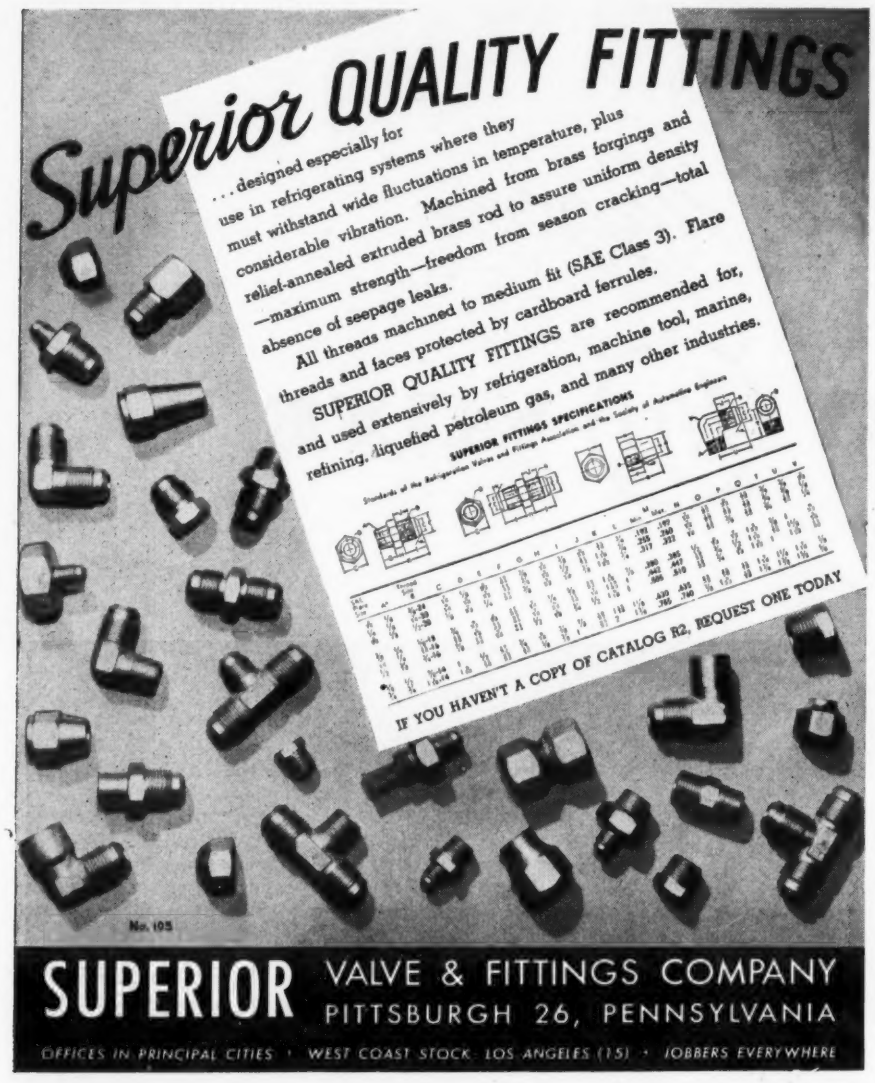
DEPENDABLE REFRIGERANT VALVES

Stocked and Sold by Progressive Refrigeration Jobbers Everywhere — Recommended and Installed by Leading Refrigeration Service Engineers.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...designed especially for use in refrigerating systems where they must withstand wide fluctuations in temperature, plus considerable vibration. Machined from brass forgings and relief-annealed extruded brass rod to assure uniform density —maximum strength—freedom from season cracking—total absence of seepage leaks.
All threads machined to medium fit (SAE Class 3). Flare threads and faces protected by cardboard ferrules.
SUPERIOR QUALITY FITTINGS are recommended for, and used extensively by refrigeration, machine tool, marine, refining, liquefied petroleum gas, and many other industries.
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Postwar Retailers Will Fail If They Lack Air Conditioning, Says Banker

Unusual Banking Methods Profitable For Originator of 'Purchase Club'

By C. Dale Mericle

FRANKLIN SQUARE, Long Island, N. Y.—This little community, located off the railroad at the crossroads, appears to be a typical American small town, and is, with the exception of its bank.

The Franklin Square National Bank and Arthur T. Roth, its executive vice president, for several years have been known widely in banking circles, and recently attracted nationwide interest, because of their unorthodox banking methods.

It was the introduction of the Purchase Club plan two years ago for the systematic saving of money earmarked for postwar purchases of appliances or other products that first focused the nation's attention on this bank.

Under the plan, which operates about the way a typical bank's Christmas Saving Fund functions, customers sign up to deposit a regular amount each week in a fund earmarked, say, for a postwar refrigerator.

The bank determines the total amount likely to be required for either the total cost of the refrigerator or merely the down payment and indicates the size of the weekly deposits. Regular savings deposit interest is paid on the fund.

But this Purchase Club plan is only one of the many activities of Mr. Roth that has made this bank outstanding. Promotion-minded Vice President Roth, apparently wanders far afield from banking in his operations. But he says, "We are bankers and not promoters."

The bank itself is in reality the community center and chief promoter of business of Franklin Square and much of Long Island. During the Christmas season, for example, the bank is gaily decorated and 15 performances of a marionette show are presented for the children. Four thousand lollipops are given away to children, no doubt resulting in 4,000 future customers for the bank.

A recreation hall with a completely equipped kitchen occupies a large portion of the remodeled basement. Used by the employes as a lunch room, this hall is also open to the community for social functions.

Also outstanding are the outdoor banking facilities offered. At the back of the bank, adjacent to a parking lot, are three teller's windows, opening out on a trellised garden. Here mothers with children and others who wish can conduct their business conveniently without having to enter the bank. So popular was the innovation, introduced, by the way, with a beer party, that the bank had to enclose the area in glass to handle "outdoor" customers during the winter.

All these activities, and many more, are sound business for Mr. Roth. Attracting the interest of present and potential customers, such unconventional activities ultimately mean more profits for the bank. For the same reasons, the bank actively supports business establishments and encourages and helps local firms to improve their operation.

Thus, it is not hard to understand why Mr. Roth emphatically states:

"We will actively promote the installation of air conditioning by retailers because we are convinced that merchants will require it for profitable operation of their business. In the future we believe no merchant will be able to conduct a profitable business without air conditioning.

"We will finance the installation of air conditioning because we are convinced that it is sound business."

An enthusiastic backer of air conditioning, Mr. Roth employs the phrase, "the nation cannot exist half free and half slave," to indicate his support for this field.

As to the type of air conditioning stores should install, Mr. Roth believes package units are advisable for smaller stores.

"In the larger stores, of course, central type systems will be installed. Incidentally," he commented, "it will be easier to sell the larger operator because he is more successful and knows, or will readily understand, the financial advantages of having his store air conditioned."

Such installations by merchants could be financed through the Purchase Club plan, but thus far, no retailer has signed up, said Mr. Roth. This does not indicate a lack of interest in air conditioning, he declared, but merely that the merchants have sufficient funds and are so thoroughly interested in air conditioning, that such savings plans are not required.

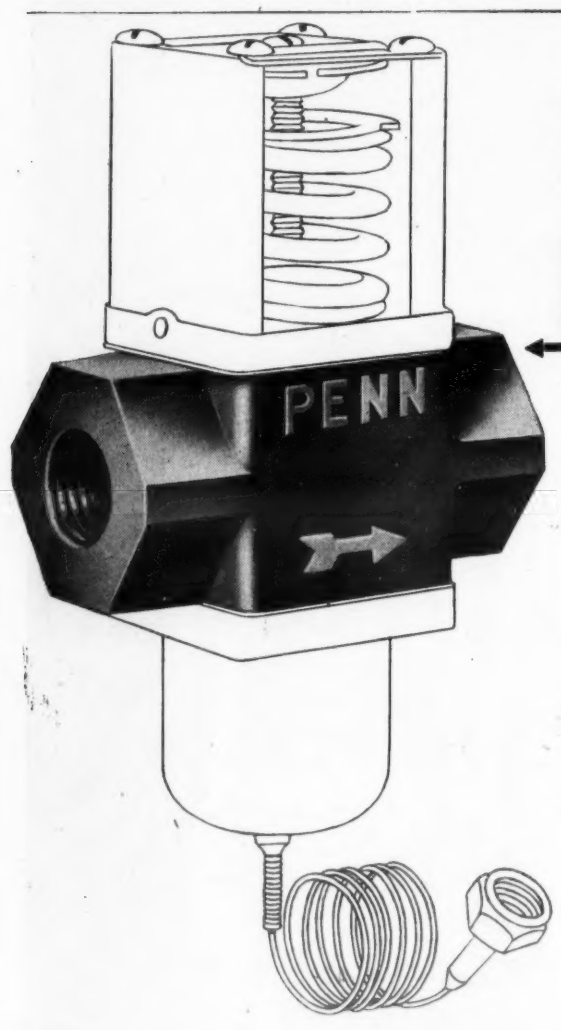
In addition, he pointed out, the bank will readily finance the installation of reputable equipment after the war by its merchant customers.

At the present time, incidentally, the bank is letting up somewhat on promoting Purchase Club savings, according to Mr. Roth.

"The savings plan was started two years ago when it was felt that the immediate postwar period would bring about severe unemployment during reconversion," he explained.

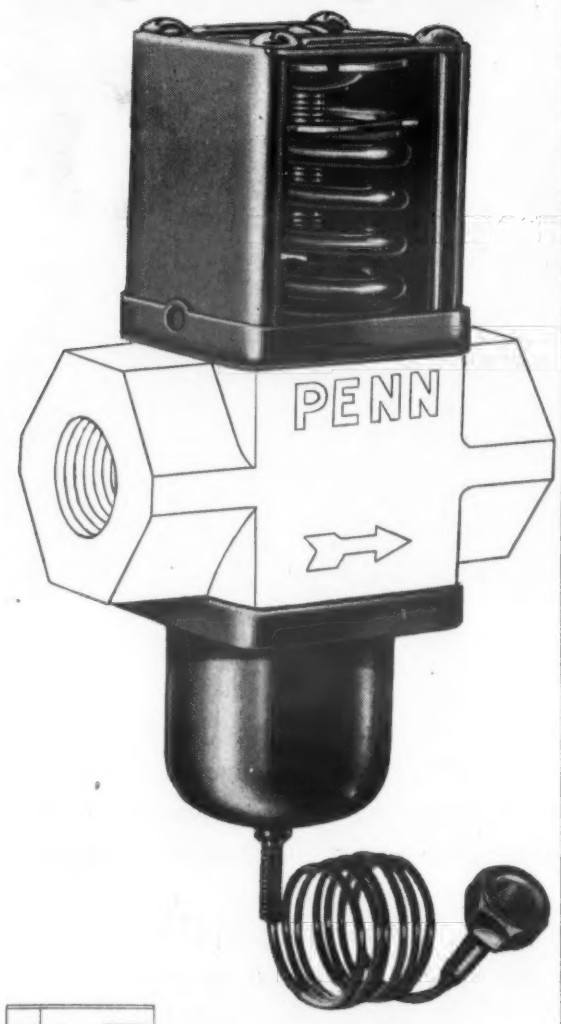
"Now, however, there is such a pent-up demand for consumer products that I don't feel we have much to worry about on that problem. Rather we want to encourage businessmen to be ready to handle the

(Concluded on Page 17, Column 1)



Sedimentation, Corrosion, Rust are harmless here

...and here they can't get in



●*Sedimentation, Corrosion, Rust.* They've crippled many a water valve, these three . . . but here's one valve they'll never harm! Known as the PENN Series 246, this new regulator keeps water right where it belongs—*away from sliding parts.*

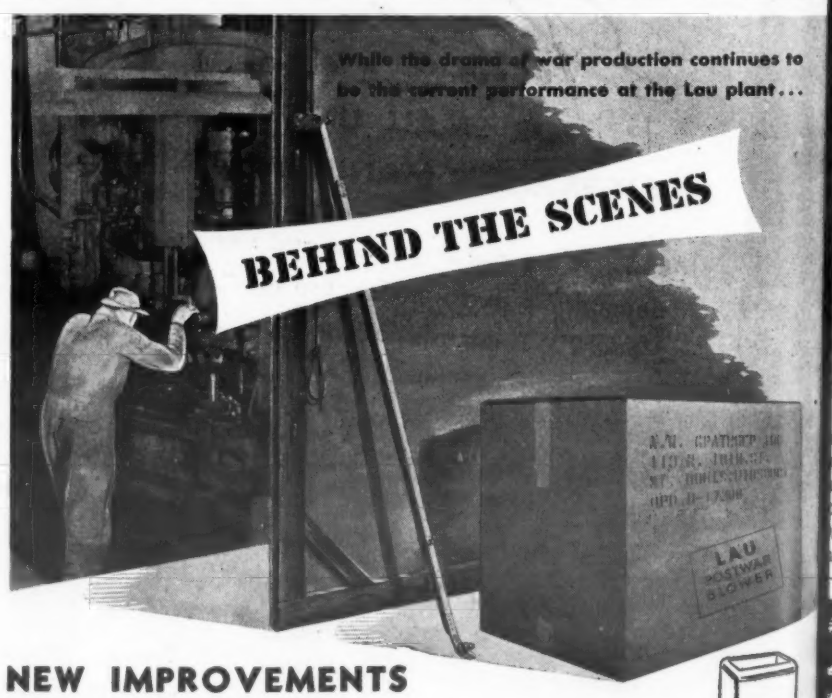
Flowing through the center section, water contacts only the valve seat, valve disc holder, and extension sleeve—all of non-corrosive material—and the rugged casting itself. Above and below, sliding parts are always dry, always free from abrasive deposits.

The valve seat can't stick, nor the range spring turn rusty. Water hammer is eliminated, yet the valve is extremely sensitive to refrigerant head pressure changes. It's available in two styles, flanged and threaded, and in a size to meet every refrigeration need. For free and complete information, ask for Bulletin R-1986. *Penn Electric Switch Co., Goshen, Ind.* Export Division: 13 E. 40th Street, New York 16, U. S. A. In Canada: Powerlite Devices, Ltd., Toronto, Ont.

PENN

AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS



NEW IMPROVEMENTS IN LAU BLOWERS await our presentation to a peacetime audience

We'll divulge all the details of recent Lau Blower improvements the moment the lid is off present-day restrictions . . . when our government and war-essential contractors to our government no longer require the limits of our production. Lau Blowers which you will be able to obtain after the war will have new scroll dimensions—improved wheel design and performance—and they'll be obtainable at still lower costs as a result of Lau straight-line mass production. Look to Lau to continue to lead in the blower field. If you now are planning your postwar equipment including blowers, be sure to contact us so that we can keep you posted regarding our product development.

The majority of Lau Blower equipment is going into direct and indirect war applications. However, we are producing a limited quantity of furnace blower package units which are available on proper priority. Contact your nearest Lau jobber.

THE LAU BLOWER COMPAN

DAYTON 7, OHIO, U. S.

WORLD'S LARGEST MANUFACTURER OF FURNACE BLOWE

Engineers and fabricators of general Air Handling Equip

Single Inlet and Double Inlet Blowers • Propeller Fans • Access

Bank Plans Displays Of Many Appliances

(Concluded from Page 16, Column 5)

postwar business expansion."

Active supporters of air conditioning, the bank building itself is partially air conditioned. When the building was remodeled in 1939, a well water system was installed for portions of the structure.

The bank, moreover, has postwar plans for extensive remodeling and expansion, which include air conditioning.

"We are considering putting in half a dozen show windows, like those of department stores, to display merchandise," declared Mr. Roth. "Here manufacturers will be invited to display their products. Placards will indicate the price and the down payment required for each item, with the bank pointing out that it will finance the time payments.

"Also in this new building we intend to have some of the offices constructed as rooms of a house. These rooms, while serving as offices, will have all the furniture customarily placed in such rooms. And we may install room or window type air conditioners in one or two of these rooms, cutting them off from the central air conditioning system planned.

"You see," added Mr. Roth, "one of the difficulties of banking is the fact that we bankers have to sell intangibles—such as checking accounts, mortgages, loans, etc. It's much easier to promote and sell tangible things like refrigerators, radios, or air conditioners.

"That's the reason behind these displays. The public—our customers—will be able to see the actual products so that in effect we will 'sell' them the product rather than the loan to cover its purchase."

Plans for promoting of air conditioning which Mr. Roth is developing also call for close cooperation with manufacturers, distributors, contractors, and salesmen.

About a year ago, interested in helping the home modernization program (and making loans to cover such improvements) the bank called a meeting of some fifty representatives of that field—roofing men, insulation contractors, lumber dealers, plumbers, electricians—to show them how homes can be modernized and how this service could be sold to home-owners, said Mr. Roth.

Although military developments later in the year made this meeting premature, Mr. Roth said the bank will resume such activities at the proper time, and air conditioning will certainly be one of the fields covered.

Although the foregoing description of some of Mr. Roth's activities may be viewed as unconventional by the average banker, a glance at his bank's financial report is a cheering sight for stockholders, at least. In the 10 years Mr. Roth has been with the Franklin Square bank, its resources have jumped from $400,000 to $10,000,000.

One more typical incident of the bank's method of operation: a young boy, owner of a newspaper route requested a loan of $29 for a bicycle so he could take on more customers. On a business basis, the loan was made, and repaid with interest.

Air Conditioning Will Be Practical For $6,000 Homes, Builders Told

CHICAGO—Wider use of air conditioning, improved oil and coal automatic furnaces easing householders' wintertime burdens, and many new and improved mechanical devices were predicted for postwar by the builders, architects, and material suppliers of the National Association of Home Builders at a convention at the Hotel Sherman here recently.

Air conditioning equipment will be practical for most homes in the $6,000-and-up price range, P. B. Zimmerman, president of the Controlled Indoor Climate Association and vice president of the Airtemp Division of Chrysler Corp., declared in his talk before the convention.

"Every day we consume about three pounds of food, four pounds of water, and 25 pounds of air," Mr. Zimmerman said. "After the war millions of Americans will be able to process the air they breathe, using any fuel medium, at a cost of only $3 a month on the average."

Cleaner homes will be possible with the use of the Westinghouse precipitron, an electrostatic air cleaner which removes 90% of the dust from the air, the builders were told. The precipitron, which will cost approximately $185, will gun for markets in such smoky cities as Pittsburgh and Chicago. Ventilating devices which will remove grease vapors and cooking odors from the compact homes of the future will become a necessity, it was predicted.

The planned unit kitchen with plenty of fluorescent light will be one of the innovations in the plumbing field according to Norman J. Ratter, secretary of the Plumbing and Heating Industry Bureau. Faucets will have fewer working parts and will be designed to spray or stream at a touch, and plastics will be used for decorative purposes.

Building experts explained that the automatic cycle washing machine, which is gaining favor, will require more plumbing facilities in basements. These machines use from 17 to 25 gallons of water in a single operation, so many 25 gallon tanks now in use will be inadequate in postwar.

Two of the most popular electronic instruments after the war will be television sets and magnetic wire records, while such things as the electric eye will merely remain gadgets. In pointing out that television sets will need special antennae, a representative of the Commonwealth Edison Co. cautioned builders to provide plenty of electric outlets to take care of the increased number of appliances.

Dustproofing of coal, central block heating with hot water, and year-around air conditioning with coal are being studied by Bituminous Coal Research according to Julian A. Toby, chairman of the advisory board. The organization has a $3,000,000 five year research program under way. Mr. Toby believes that coal heat can be as automatic as oil after the war, with bin stokers.

Stoker manufacturers say that the first three postwar years will show an increase in the sale of stokers over that of the previous 15 years. There are a million stokers now in use and 150,000 additional are planned for manufacture in 1945.

In addition to heat zoning and modulation through improved thermostatic equipment, "radiant heating" may be used more widely. There are several practical methods, such as pipe coils in walls, floors, and ceilings, or with "skin heating" by passing hot air through walls.

THE HARRY ALTER CO.

1728 S. Michigan Ave. Chicago, 16, Ill. | Two Big Warehouses to Serve You | 134 Lafayette St. New York, 13, N.Y.

MODERNIZE WITH
POLARTRON CONTROL
FOR "FROST FREE" CONSTANT COLD
MINNEAPOLIS-HONEYWELL REGULATOR CO.

DOLE
VACUUM PLATE
COOLING and FREEZING UNITS
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REFRIGERATION ENGINEERING Inc.
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STANGARD
PRIME SURFACE *Cold Plates*
FOR MAXIMUM EFFICIENT REFRIGERATION

★ For Locker Plants, Sharp Freezing, Ice Cream Cabinets, Hardening Rooms, Soda Fountains, Storage Rooms, Milk Coolers, Liquid Cooling, Food Counters and other similar uses.

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Stangard Facilities are contributing to the production of materials for our National Defense.

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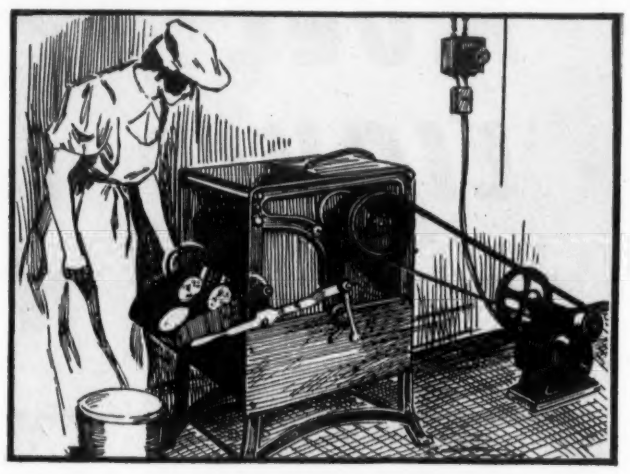
46-76 Oliver Street, Newark, N. J.

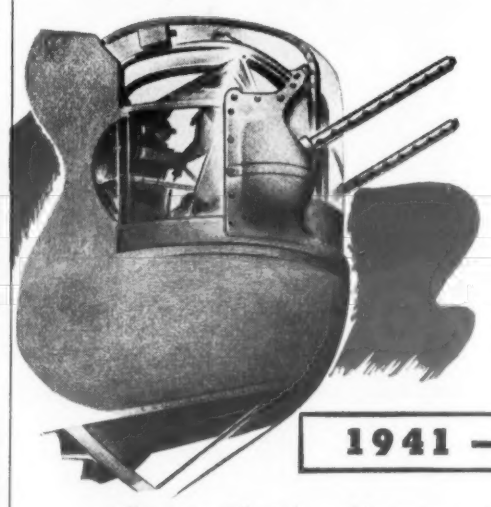
Electrimatic
AUTOMATIC CONTROL VALVES AND REGULATORS
2100 INDIANA AVENUE · CHICAGO 16, ILL.

Motor Power in Action!



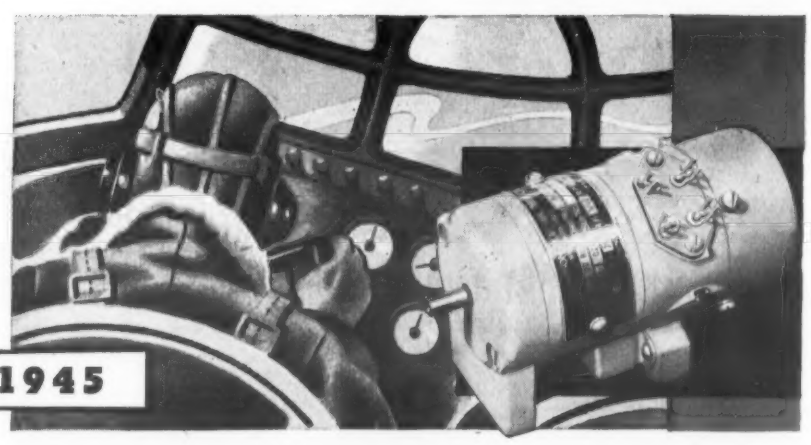
1904 — *An early Emerson-Electric motor drives a potato-peeling device.*

...54 years' experience backs developments for peace and war



1941 – 1945

Emerson-Electric achievements in the new art of airplane power-operated gun turret development...



... have been matched by production records in aircraft motors, requiring creative design and new precision standards.

194X
Compact electric motors for postwar products.

To help you sell Mrs. Postwar America

Emerson-Electric's seasoned engineering and development facilities are available to manufacturers of postwar motorized appliances and equipment. Mrs. America knows that Emerson-Electric motors are "built to last".

THE EMERSON ELECTRIC MANUFACTURING COMPANY
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MOTORS · FANS
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NEW TYPE REPLACEMENT SEAL

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Eliminate Old Bellows Type Cup Seal

Write for Descriptive Literature and Price

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REPUTABLE and FINANCIALLY RESPONSIBLE CHICAGO MERCHANTS

At present selling a million dollars of Processed, Frozen and Specialty Foods a year to Grocers, Hotels, Restaurants and Institutions, wish to re-enter

STORE EQUIPMENT, REFRIGERATION and AIR CONDITIONING FIELD

Soliciting distributorship of Quality Products produced by reputable Manufacturers; preferably on an exclusive basis.

Will cover Greater Chicago Area and operate as a separate institution as we did pre-war.

Can furnish top references and proven records in Equipment and Food Field.

BOX 1681

AIR CONDITIONING & REFRIGERATION NEWS

Army Refrigeration Problems

By P. B. Reed

Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

Finding & Preventing Refrigerant Leaks (1)

Of all the things that have caused trouble with refrigerating equipment of all sizes and types, the greatest of these are leaks. If all leaks were suddenly and permanently stopped, refrigeration service work would be enormously reduced, far fewer men would be required, and the only refrigerant used would be for the original charges in new installations.

The number of service calls due to "defects" in material or workmanship (bad fits, broken parts, leak-back of discharge and suction valves, electrical trouble, etc.) are fewer than the number of service calls due to leaks. Here, then, is a field where vast savings can be made in material, labor, time, and money not to mention foods, reputations, and customer goodwill.

Aside from these direct losses, leaks cause attendant troubles. If some of the refrigerant is lost, the turbulence in the evaporator decreases and action is sluggish with the result that there is not correct oil return and the compressor is damaged from insufficient lubrication due to low oil level.

This is particularly true in high-side and low-side float types having accumulators or boilers in which the oil collects if there is not sufficient liquid refrigerant to carry the oil along.

Majority of leaks are preventable and result from lack of care on someones part. Nearly all leaks are at screwed, flared, soldered, or gasketed joints; a few are at shaft seals or from split fittings, porous castings, accidental breaks, and similar causes.

SOLDERED JOINTS

In the early days of electric refrigeration most "sweated" or soldered joints were made with soft solder, which consists of about one-half lead and one-half tin. The flux is usually muriatic acid "cut" with zinc, that is, in which a few flakes of zinc have been dissolved. It was found that in many cases, the acid was not all boiled or evaporated out of the joint and some of it remained. This gradually ate through the solder until in time, it came out to the surface as a blister and later as a hole.

Other fluxes, such as those having resin base, were used with somewhat greater success. But soft solder does not make a joint of much strength nor dependability. The trend is away from soft solder except for parts that must be easily removed in the field, such as sweated screwed fittings or valves, but even in these cases the tendency has been to sacrifice field removability to greater dependability.

Chief advantage of soft solder is its low melting point, about 360 to 450° F., which allows the use of an iron or a simple torch. In refrigeration manufacturing processes, welding, brazing, and silver soldering have largely replaced lead soldering. These processes make stronger joints that are less susceptible to breakage from vibration or accidental dam

Welding is used to join two piece of ferrous metals (iron or stee) aluminum; brazing for brass or co per to one another or to iron or ste Silver soldering may be used wi either iron, or copper or the alloys.

Welding consists simply of heati the two pieces of metal to be join until they literally melt and run t gether. This requires a very h flame such as produced by burnin acetylene with oxygen or an electr arc. Welding temperatures vary a cording to the melting points of th metals to be joined, but for iron steel are above 2,500° F.

Ordinary brazing rod consists about equal parts of copper and zin and brazing with this materi requires temperatures of abo 1,600° F., which can be obtained a gasoline blow-torch or a Prestoli torch. Silver alone melts at 1,761° but when alloyed with copper a zinc, or other metals, it melts temperatures from 1,175° F. 1,500° F. It serves very much t same purpose as brazing.

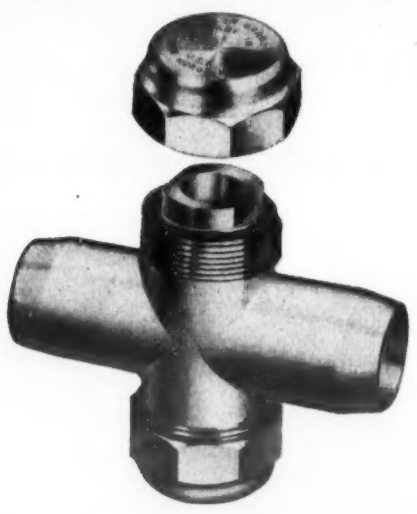
Brazing and silver-soldering a used principally in joining brass copper to one another or to iron steel. The flux for brazing or silv soldering is usually powdered bora Due to the high heats required, wel ing, brazing, or even silver-solderin are ordinarily shop or factory pro esses not often used out on the jo

If a joint has once been solder with a lead or tin based solder, will be found quite difficult to bra or silver-solder that joint and ma it strong or gas tight unless tho portions of the metals that have be tinned are filed away.

During the war, tin has been such high demand and so little o tainable that its use in solders h been reduced as much as possib A lead solder having a tin conte less than 40% is undependable f refrigeration joints either from

(Concluded on Page 19, Column 1)

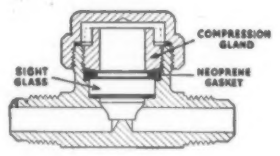
MUELLER BRASS CO.
LIQUID INDICATORS
WILL NOT LEAK



DOUBLE PORT LIQUID INDICATOR

WITH SEAL CAP

The improved design of our liquid indicators is effective assurance against refrigerant leakage around the sight glass. The sight glass is sealed into the forged brass body by a heavy Neoprene gasket which, in turn, is compressed by a packing gland, which forces the pliable gasket along the sides of the glass and produces a perfect seal.



Mueller Brass Co. Liquid Indicators are made in a complete range of styles and sizes. The seal cap and open port type may be installed where light conditions are favorable. Where the light is poor, we recommend the use of our double port liquid indicators illustrated here. By flashing a light through one port, the exact condition of the refrigerant may be determined through the other port.

The new design of the compression gland permits the use of standard wrenches for tightening.

NOTE: All models of Mueller Brass Co. filters and line strainers may be obtained with female flare connections on one end. This makes it possible to assemble any desired filter to a liquid indicator for installation in the liquid line of the system.

MUELLER BRASS CO.

PORT HURON, MICHIGAN

DAVISON'S Silica Gel Provide

Extra Protection

Davison's Silica Gel has become the industry's preferred drying agent because it *does more* for you than ordinary drying agents...gives you protection beyond removal of moisture.

1—it is processed especially for the dehydration of refrigerants. 2—its scientifically-determined particle size assures you that the refrigerant will not channel—will be distributed evenly throughout the cartridge. 3—this even distribution of the refrigerant makes it possible for it to be in complete contact with the entire pore surface area (7,500,000 square inches per cubic inch of Silica Gel) at all times. 4—it removes acids and corrosive compounds . . . in addition to moisture . . . instantly. 5—its capacity for moisture is not affected by oil. 6—it will not cake nor powder. 7—it will not attack metals or alloys.

All you have to do to get this COMPLETE DRYING AGENT that is effective on Freon, Methyl Chloride, Sulfur Dioxide, etc., is to specify Davison's Silica Gel from your jobber . . . in factory-charged dehydrators or in bulk for refill.

CURTIS BAY WORKS

THE DAVISON CHEMICAL CORPORATI

BALTIMORE-3,

Progress through Chemistry

Canadian exclusive sales agents for DAVISON'S SILICA GEL:
CANADIAN INDUSTRIES LIMITED, General Chemicals Division

Finding & Preventing Refrigerant Leaks

(Concluded from Page 18, Column 5)

trength or gas tightness basis. One ompany has brought out a very ood substitute for soft solder consisting of about 21% tin and the rest ead, but with a slight amount of ilver. This makes a reasonably trong acceptable joint.

Along in the late twenties and arly thirties when air conditioning stallations started to become popular, one of the troubles was due to eaks at the many sweated joints in he refrigerant lines. Soft solder was nsatisfactory, but brazing or silverdering was quite inconvenient and ather expensive.

A new solder, known as "ninety-ive, five," consisting of 95% tin and % antimony was found to fill this eed in an excellent manner. It akes a strong joint, gas tight, and esists vibration. Because of its high in content it has been off the market uring the war but will again be vailable after the war and will gain resume its popularity.

In order to get the best results rom it the flux should be of the nonorrosive (non-acid) kind. "Ninety-ive, five" is especially suitable for opper-to-copper, brass-to-brass, or opper-to-brass joints such as refrigrant lines and if properly used with non-corrosive flux, it makes a trong, dependable sweat connection ot subject to "blisters." It can be orked with a gasoline or alcohol low torch or a Prestolite torch, or ven a soldering iron as it melts at bout 450 to 460° F.

SOLDERING RULE NO. 1

When soldering or brazing, be sure hat the metals to be joined are LEAN, and down to the raw metal. emove all rust, corrosion, tanish, r any other surface covering. Be ure that there is NO oil or grease n the surfaces or near enough that he oil or grease will flow to the leaned surfaces when they are warmed. File, sand paper, emery loth, and steel wool may be used, ut be sure that they are clean and ree from grease or oil.

When you apply the flux do not se your finger; it is oily. Use a lean stick or brush. When the surfaces are hot, do not touch with a stick, cloth, or brush that will burn and leave an ash or residue on the metal. Use flux sparingly; just enough to thinly cover the surface.

SOLDERING RULE NO. 2

Use a clean flame. If your torch is improperly regulated, it will deposit unburned carbon on the joint, making it practically impossible to make a good soldered joint. Do not use too small a flame, so that it does not cover the work; otherwise one portion will cool when you move the flame to the other portion.

Frequently, touch the solder momentarily to the metal to test its heat but do not leave the solder on the metal for the solder may melt from the flame before the metal is hot enough or before the flux is evaporated.

The flux must evaporate and get out of the way before the solder flows, otherwise it will have to be "boiled out" to prevent blisters later.

Do not get the metal too hot. As soon as it is hot enough for the solder to flow when touched to it, the solder will spread over the entire surfaces if they are properly prepared.

SOLDERING RULE NO. 3

Keep the space between the two surfaces as little as possible; only one or two thousandths are needed, for capillary action will draw the hot solder in between the two surfaces if they are very close together better than if they are far apart.

Moreover, the joint with the close fit and a thin coating of solder is much stronger and less liable to leak than one that depends on a heavy fillet of solder piled up in a mistaken attempt to strengthen the joint or cover up possible holes.

RULE NO. 4

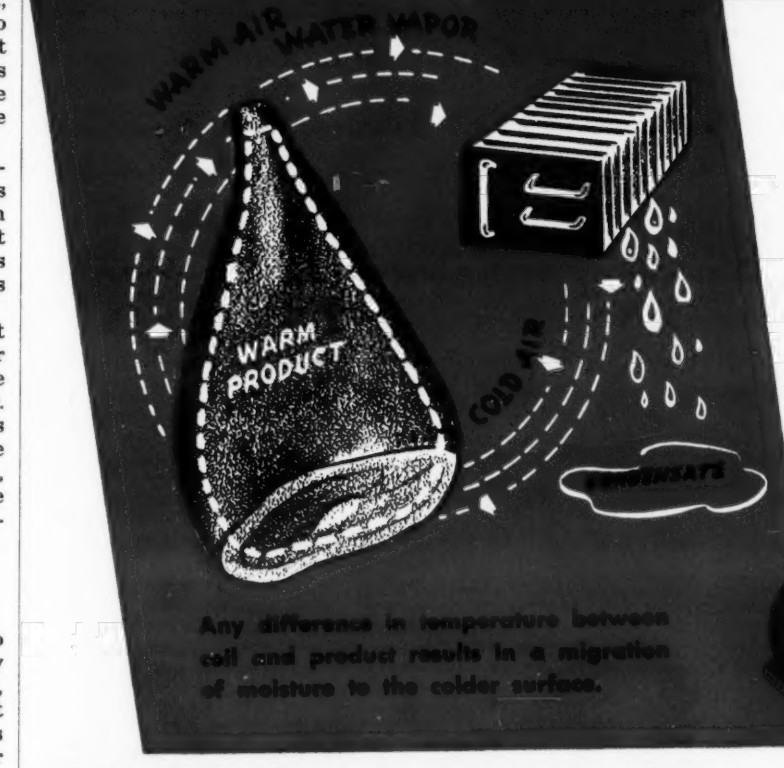
Never attempt to solder a joint on which there is pressure. Reduce the pressure to atmospheric or, in most cases, even somewhat into a vacuum. Wipe off excess solder with a quick motion of a soft brush.

RULE NO. 5

If a joint doesn't seem to want to take solder properly, it is usually better to take it apart, clean it, and start over, rather than to try to patch it up.

NO. 1 OF A SERIES

DEHYDRATION
A BASIC REFRIGERATION PROBLEM


WARM AIR
WATER VAPOR
WARM PRODUCT
COLD AIR
CONDENSATE
Any difference in temperature between coil and product results in a migration of moisture to the colder surface.

M&E WAS A PIONEER
In Solving
HEAT TRANSFER PROBLEMS

To the merchant, the storage of food products with a minimum of dehydration, is a matter of simple economics. Dehydration — weight loss—and profits lost, are all equal terms when you sell by the pound.

Recent product developments by M&E show that the problem of dehydration is subject to practical solution.

MERCHANT & EVANS CO.
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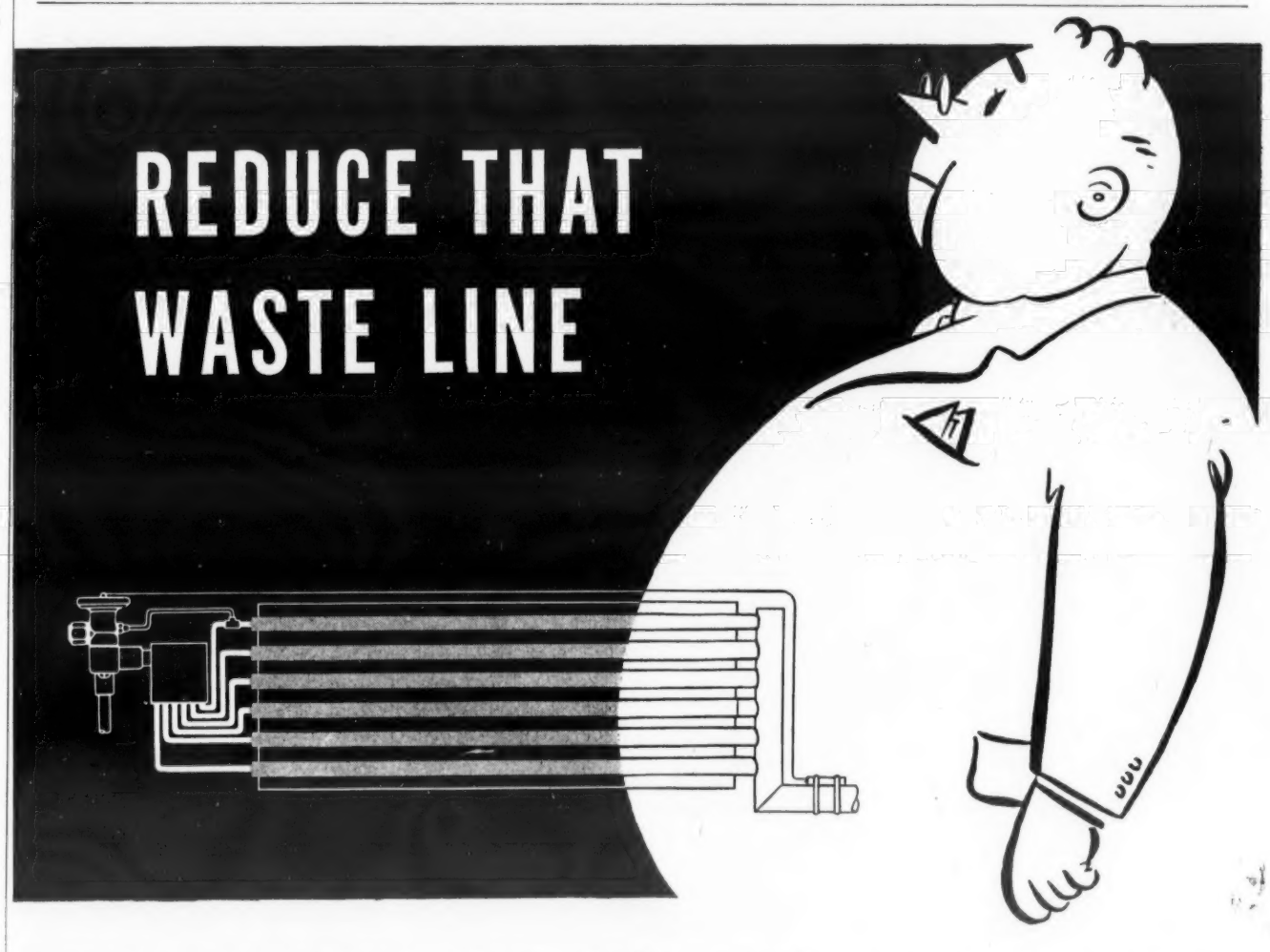
MANUFACTURERS OF CONDENSING UNITS AND FIN-TYPE COIL PRODUCTS

REDUCE THAT WASTE LINE



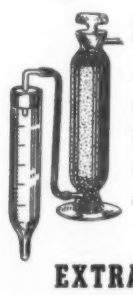
Service Engineers Should Know...

THE PURITY OF "VIRGINIA" SULFUR DIOXIDE IS CAREFULLY GUARDED

— the content of each cylinder — large or small — is analyzed 2 separate times.

1. CLEANLINESS TEST

A measured sample drawn from each container must be water-white in color and when boiled to dryness must leave no dirt, oil or other residue. This test detects undesirable impurities.



2. MOISTURE TEST

A sample of known weight from each cylinder is passed through P_2O_5 (a dessicant). Moisture calculated by the increased weight of the tube must not exceed 50 parts per million; low moisture prevents freeze-ups and oil-sludging.

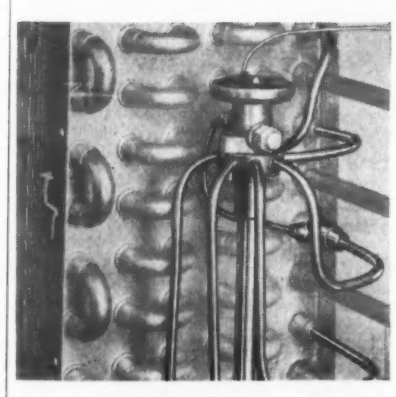
EXTRA PRECAUTIONS

To prevent any possible contamination of "Extra Dry Esotoo" every cylinder is dry cleaned and finally rinsed with pure SO_2 before filling.

Each cylinder valve is inspected and reserviced to assure trouble-free operation — this saves time and money for the service engineer.

The name "EXTRA DRY ESOTOO" on the cylinder is your guarantee of quality. Sold by refrigeration supply jobbers everywhere.

VIRGINIA Smelting Co.
WEST NORFOLK, VA.
76 BEAVER ST., NEW YORK 5 :-: 131 STATE ST., BOSTON 4
Agents for Kinetic's "Freon-12" — "Freon-22" — "Freon-11"



The Alco Multi-Outlet Thermo Valve shown above is a typical installation. Note efficient arrangement of outlet lines from valve to evaporator circuits.

ALCO VALVE COMPANY

853 Kingsland Avenue, St. Louis 5, Mo.

Designers and Manufacturers of Thermostatic Expansion Valves; Pressure Regulating Valves; Solenoid Valves; Float Valves.

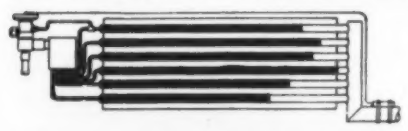
Keep Refrigeration Systems In Shape To Do An Important Wartime Job

Here's a weapon to use in the fight against waste in refrigeration. It's the Alco Multi-Outlet Thermo Valve—a combination expansion valve and distributor that keeps all coil surface working by insuring even distribution of the refrigerant to all coil circuits.

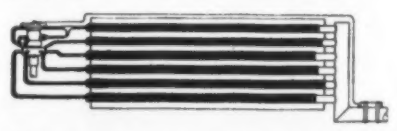
Savings with a multi-outlet thermo valve begin with installation costs because it eliminates the need for oversize coils or liquid headers.

Operating costs are cut, too, for refrigerant is fed equally to each of the evaporator circuits, regardless of fluctuations in the load. There is no "starving" or "flooding." This efficient use of *all* coil surface reduces the running time and lengthens the "off" cycle.

The Alco Multi-Outlet Thermo Valve is part of the complete line of Alco engineered refrigerant controls that has been used aboard ships for many years by the U. S. Navy and Maritime Commission, and now, of course, in much larger quantities. Small allocations of these same valves are made each month for urgent civilian priorities. For details on applications and availability of this control, see your Alco jobber, Alco Valve Company, 853 Kingsland, St. Louis, 5, Missouri.



This diagram shows poor distribution. Only part of the coil is properly fed. The working portions of the coil are shown in black. "Loafing" parts of the coil are shown in white.



This is the same coil, fed by a Multi-Outlet Thermo Valve. Most of the coil is now doing real work. These valves increase coil capacity up to 25%.

Difficulties Faced In Making Altitude Test Chambers Outlined by Engineer

Editor's Note: In this article Erwin Lodwig, chief refrigeration engineer for Mobile Refrigeration Division, Bowser, Inc., at Woodside, Long Island, N. Y., concludes his discussion of problems relating to altitude test chambers. The first article appeared in the Feb. 12 issue of the News.

"Various types of units are available for different applications. Production testing has required rapid pressure and temperature changes and throughout a range which would give a satisfactory indication of subsequent operating performance. Lower pressures have not exceeded that equivalent to an altitude of 50,000 feet and temperatures below -80° F. have not been required. However, industry in general has undertaken an extensive development program.

"This program is responsible for an increasing demand for flight similitude chambers for research and experimental use. The requirements have been limited only by what could be offered in the way of test equipment. The operating range is being constantly extended and now lies well beyond the requirements for production testing which were originally difficult to meet," declared Mr. Lodwig.

"Calibration checks on radiosondes given just before flight are a final check on accuracy of the instrument. This problem of pre-flight testing was one of the first. In order to accurately determine the lag in the responsive elements of the radiosonde, a constant rate of change of altitude corresponding to a balloon ascension rate of approximately 600 feet per minute was necessary. A constant velocity delivery of air at this linear temperature reduction was passed through the instrument while a pressure change rate simulating a rise of about 600 feet per minute was maintained.

"By combining the constant velocity of air through the instrument with the linear change in alitude and temperature, an excellent calibration check of the instrument could be made. This performance was achieved with a program temperature controller and a manually set valve controlling the rate of exhausting the air from the chamber. The accuracy of control was held to within 1° F. of an exact linear rate. This enabled repeated tests to be run covering exactly the same operating performance.

"As a further refinement in an alitude chamber where the rate of change of temperature and pressure was to be made linearly either up or down, a variable time controller was incorporated which could vary the temperature and altitude change rate from 0 to the maximum as required for the test work. Linear rates of change simulating climbs from 0 to 10,000 feet per minute and dives from 0 to 500 miles per hour have been duplicated in flight similitude chambers. Any complicated temperature and pressure program required for repeated tests or experiments can be produced," he added.

SOLUTION TO PROBLEMS

"Simulating a rapid decrease in pressure and an increase in temperature and humidity such as would be encountered during a dive from high altitudes has been presented and is a difficult condition to satisfy. Here it was necessary to accomplish a temperature change of 125° and more in a period of 40 to 45 seconds. Proper air baffling and the use of very low mass insulation has made such changes possible. A typical operating dive-climb curve obtained from a test run shows a simulated dive from 38,000 feet altitude and -68° F. to sea level at 58° with a subsequent climb back to 38,000 feet and -62° F. The dive was accomplished in 30 seconds and the subsequent climb in approximately 2.5 minutes.

"Certain pieces of equipment such as motors, generators, and radio equipment dissipate heat while in operation. Building test chambers satisfactory for checking the performance of such equipment was much more difficult. The problem of dissipating these high heat loads in a relatively small space which was held at high altitude conditions had to be solved," pointed out Mr. Lodwig.

DISSIPATING HEAT

"A large amount of prime flat surface exposed to the heat radiated from this equipment proved to be the answer to maintaining the low temperature within the test space under altitude conditions. The operating curves obtained from actual performance tests have shown that for high heat absorbing requirements at altitude conditions where air is no longer a satisfactory heat transfer medium, the greater the amount of refrigerated steel wall plates exposed to the direct radiant heat from the equipment under test the lower the operating temperatures could be maintained.

"One chamber measuring 36 inches wide x 36 inches high x 24 inches deep inside which was designed for testing generator units at high altitude conditions was able to dissipate an 8,000-watt load at -50° F. while a simulating altitude of 50,000 feet was maintained. Four walls surrounding the chamber were refrigerated steel plates while the front was closed with a large glass door.

TRIED EXTENDED SURFACE COILS

"Without refrigerating these wall plates the temperature under these operating load conditions rose to -10° F. Another altitude chamber 24 inches wide by 24 inches high by 30 inches deep designed for testing radio equipment was capable of dissipating a 3,000-watt load at the simulated altitude of 30,000 feet. Further tests were conducted with a small altitude chamber to determine the effectiveness of the extended surface finned evaporator coil under various operating conditions.

"A 300-watt heat load was used for all tests. Both the wall plates of the chamber and the coil were refrigerated and the first test run at sea level conditions. It required about 15 minutes to attain a temperature of -33° F. The second test was run at simulating altitude

(Concluded on Page 21, Column 1)

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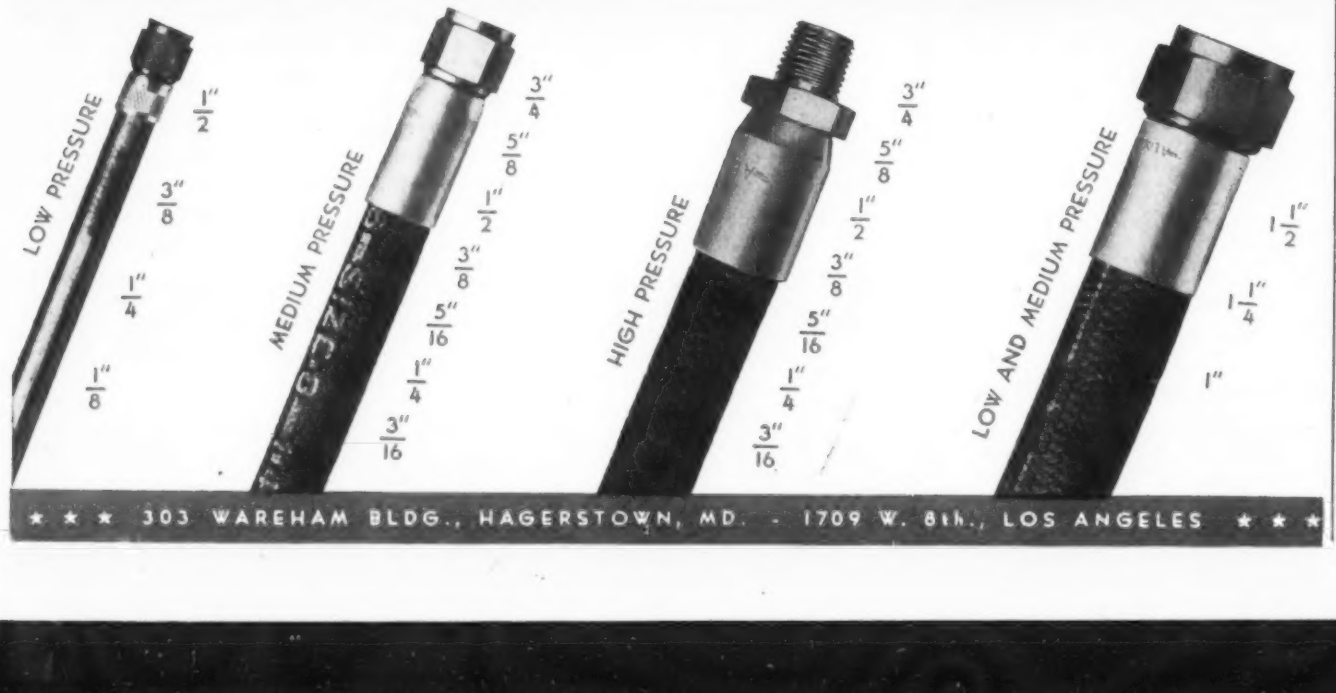

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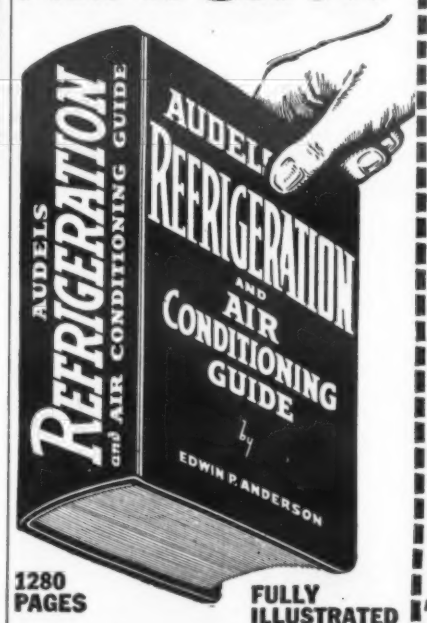

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Performance of Test Chambers Affected By Several Factors

(Concluded from Page 20, Column 5)

31,500 feet with the wall plates and evaporator coil refrigerated. After air operating period of 30 minutes a temperature of -26° F. was reached. The third test was run without air circulation and without the evaporator coil refrigerated. At a simulated altitude of 50,000 feet it required 30 minutes to attain -22° F.

"A fourth test was run at sea level conditions with the side wall plates refrigerated and without evaporator coil or air circulation used. After an operating period of 30 minutes a temperature of -30.5° was reached.

"From the above tests the importance of the refrigerated wall plates was clearly seen," said Mr. Lodwig. "By constructing the walls of the altitude chamber of refrigerated plates high heat loads could be readily dissipated even at pressures as low as 1 inch absolute. Entirely new data will be available when experimental work now under way has been completed. This data will cover the performance of finned surface at high altitude conditions. Early indications point to the following factors having great influence upon the performance:

"1. Surface finish.

"2. The color of the surface.

"3. The material used.

"4. The heat conductivity of the material at very low temperatures.

"Naturally the physical limitations imposed upon the material by the refrigerant and other construction requirements will limit the application to commercially available and readily workable materials. Copper and steel have been found to be quite satisfactory.

"At present a number of very interesting experimental high altitude chambers are being built," he said. "These chambers will have provisions for not only controlling temperatures between 200° F. and -150° F. and pressures from 31 inches to .5 inches Hg absolute, but also for controlling humidities. By means of dewpoint depression as much as 60° spread between dewpoint and dry-bulb conditions of the air at all pressures can be achieved. Provisions have already been made for injecting water vapor and steam so that ice formation and snow formation can be duplicated.

"Two systems of dewpoint control for obtaining various humidities can be used. One system depends upon mixing quantities of air, one at high temperature and one at low temperature and mixing a quantity of each so that the proper dry bulb and dewpoint conditions can be achieved. By using a refrigerated surface at a low temperature and controlling the heat input to the high temperature air section, any dry-bulb condition and dewpoint depression within the range of the equipment can be maintained.

"The second method is to cool the air by passing it over a cold surface where the moisture is deposited. By re-heating this air to the dry-bulb temperature the required spread between the dry bulb and dewpoint can be achieved. Dewpoint control can be accomplished by controlling the dewpoint surface temperature independently of the refrigerant temperature. In this way with the installation of a sufficient dewpoint surface and heat capacity any spread between dewpoint and dry-bulb conditions can be attained.

"Special equipment of all types can be furnished so that pressure measurements, the feed of high pressure oil or gas can be made to measuring instruments on equipment under test. Sealed shafts can be provided for operating controls."

R. F. LAUER
Now manages York activities in the California district.

R. F. Lauer Heads York Operations In California

YORK, Pa. — Rodney F. Lauer, manager of the Washington national service office of York Corp., has been named district manager of the company's California operations with headquarters in Los Angeles, according to an announcement by J. C. Tweedell, general sales manager.

The new district manager began work in the refrigeration and air conditioning plants of York while still an undergraduate at Cornell university. On his graduation as a mechanical engineer in 1930, Mr. Lauer joined the company as a student engineer and remained in the factory until 1934. He was then assigned to the Philadelphia branch and worked there as an application engineer and later as sales manager of the southern district of that territory until 1942, when he became manager of the Washington office.

Mr. Lauer's appointment fills a vacancy existing for several years.

COMM. WILLIAM M. CASHIN
Recently promoted to a commander, "Bill" Cashin was New England representative for Brunner Mfg. Co. for 19 years before rejoining the Navy in 1942.

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Kelvinator Granted $16 Million Loan

DETROIT—Nash-Kelvinator Corp. has increased its working capital with a $16,000,000 low-interest "non-war" loan placed with 18 banks, H. A. Lewis, vice president, reported.

Believed to be the first major industrial loan of the war years to be specifically earmarked for "non-war production purposes," the newly created fund is designed to give Nash-Kelvinator additional freedom for rapid action when resumption of domestic operations is possible, Mr. Lewis said.

Terms of the "peace-preparedness" loan, which was made for eight years at 2¼% interest, reflect bright post-war prospects in the automotive and refrigeration fields in both of which Nash-Kelvinator is an active participant.

"We are alert to the obligation to transform our war production, when circumstances warrant, with the utmost speed and greatly elevated sights, in the interest of maximum employment and consumer needs," Mr. Lewis declared.

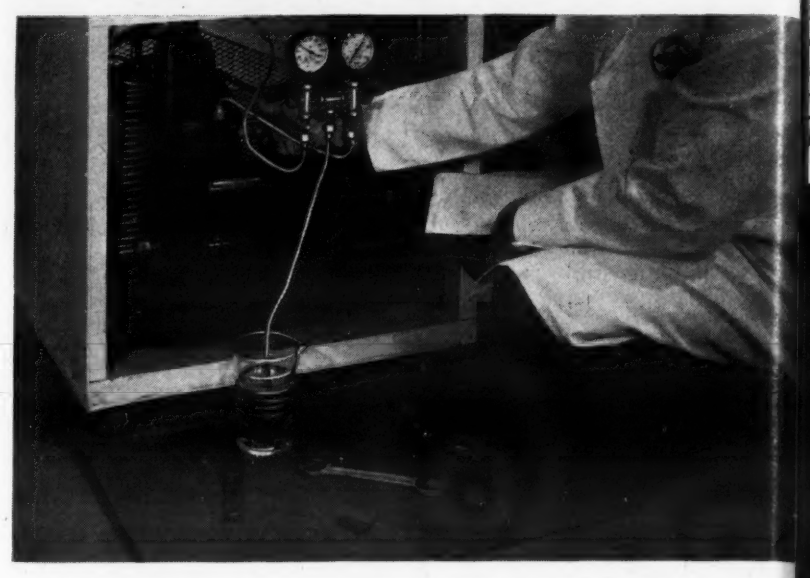
K. & T. Service Co. Operating In Los Angeles

LOS ANGELES—K. & T. Refrigeration Service is the firm name under which John Kiel and Charles L. Bradley have published a certificate that they are conducting business at 4308 North Figueroa St., Los Angeles.

Servicing Frigidaire Open-Type Systems

Instalment No. 4

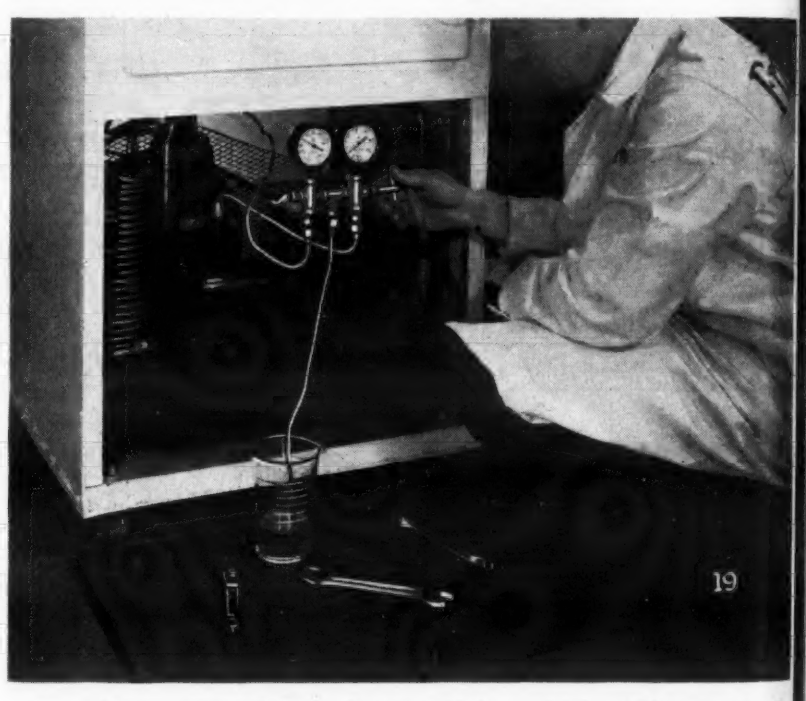
14—Adding Oil—First Step



In either case, to add the oil, first, attach oil line to gauge set, purge, close compressor suction valve, and draw a deep vacuum of around 15 to 20 inches. (See Illustration 14.)

When putting oil into the container, two things should be remembered. One is that the container must be absolutely clean and dry, and the other is that the end of the oil line be so placed that it remains in the bottom of the container, so there is no chance of air being drawn into the system. A good safeguard is always to add a little more oil than required to the container so that the end of the line is sure to be covered.

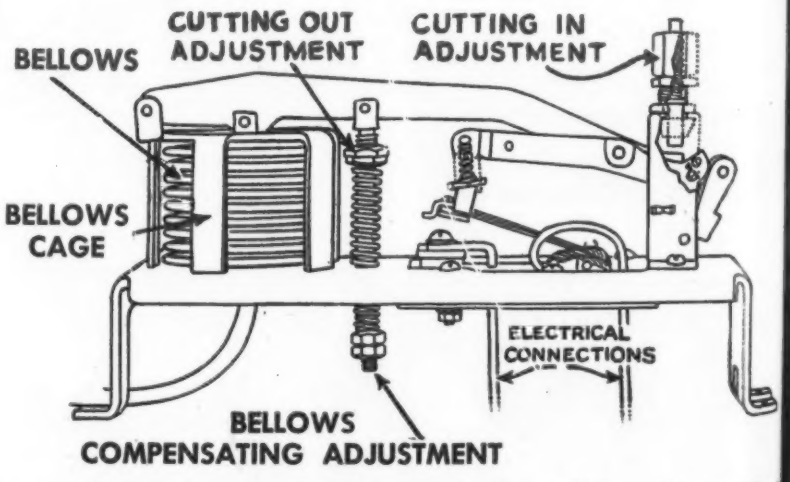
15—Adding Oil—Second Step



Next, open Gauge Suction Valve which will permit the oil to be drawn into the system. If the compressor is equipped with an oil level indicating plug, a ½ pint of oil should be added at a time until the oil reaches that level.

If the compressor has the bottom drain plug only, the full required amount can be added in a single charging, since the crankcase has been previously drained. In either case, when the proper oil charge has been added, back-seat the suction valve on the compressor, remove the gauges. The unit is then ready to operate.

16—Adjusting Low Pressure Temperature Control



Since the low pressure control regulates the cabinet temperature, its proper adjustment is essential. As its name implies, it is connected into the low pressure side of the system and operates according to the amount of pressure exerted upon it.

(Continued on Next Page)

ervicing Frigidaire Systems

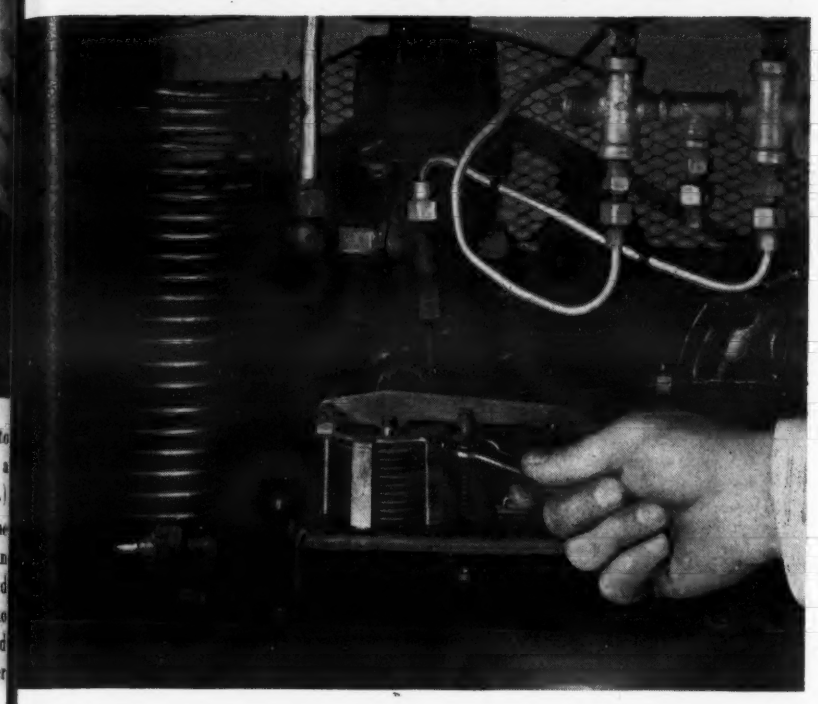
(Continued from Preceding Page)

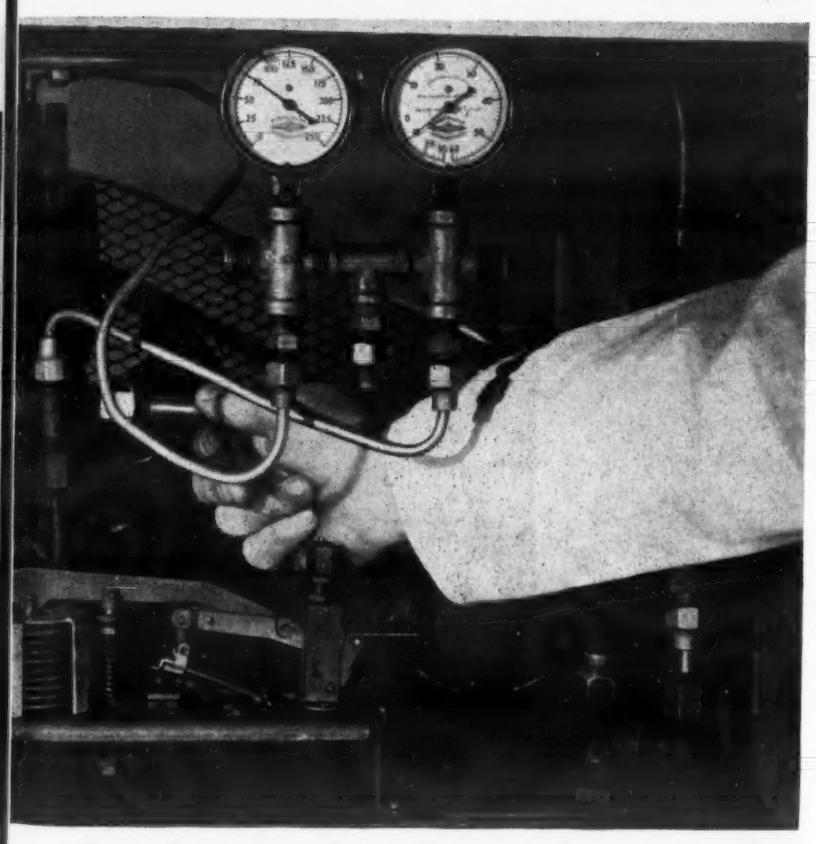
This pressure enters the bellows, the action of which is limited by a spring and expands or contracts according to the degree of pressure exerted.

When the pressure is sufficiently high, the bellows expands and closes the toggle switch through the medium of the arm. This, of course, cuts in the condensing unit.

On the other hand, when the freezer pressure is sufficiently reduced, the bellows will collapse to the point where the arm opens the toggle switch and the unit ceases operation. There are two important adjustments of this control—the cut-out and the cut-in.

17—*How to Make Cutting-Out Adjustment*





First, how to make cutting-out adjustment. Adjust cutting-out nut by turning downward to obtain colder temperatures and upward to obtain warmer temperatures. Thus, by changing the tension on the bellows spring, the pressure at which the switch opens and closes is regulated.

Next, *test new cutting-out adjustment* by closing the suction valve gradually and noting the gauge readings. By so doing, the reduced pressure opens the switch and shuts off the unit in accordance with new setting. This is a quick means of getting the condensing unit to cut out, rather than to wait until the end of a normal cycle. If the cut-out setting isn't correct, readjust the switch until it is.

Carrier Profit for '44 Nearly Double '43

SYRACUSE, N. Y.—Net profit of $1,205,524, equivalent to $2.83 per common share after all charges, including taxes, was reported by Carrier Corp. here for the fiscal year ending Oct. 31, 1944, a gain over the previous year which resulted in a net of $701,309, equal to $1.73 per common share.

Backlog of orders on hand Oct. 31 totaled $18,532,756, a decrease from the total of $23,275,766 reported for the previous fiscal year. Operating profit last year was $4,216,390, but in the previous period totaled $2,915,324.

Carrier Corp. reports that renegotiation proceedings have been completed for all periods up to Oct. 31, 1943, and that no excessive profits were realized on government contracts. Renegotiation on contracts during 1944 has not yet occurred, but the company believes that profits reported for this fiscal year "are not excessive."

Total taxes for the year amounted to $3,617,991, compared with $2,641,952 paid the previous year. Orders booked during 1944 totaled $33,512,964, as against $27,976,848 during the 1943 fiscal year.

New Firm in Glendale, Calif.

GLENDALE, Calif. — Broadway Refrigeration Service is the firm name under which Park E. Reese and Lucas Prewett have published a certificate that they are conducting business at 413 East Broadway, Glendale, Calif.

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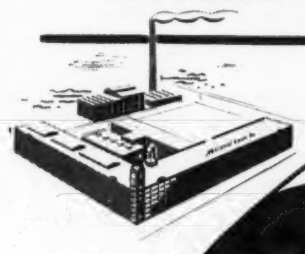

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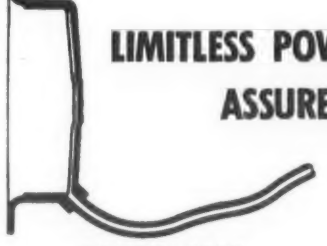
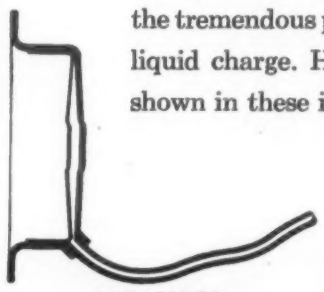


CONTRACTED

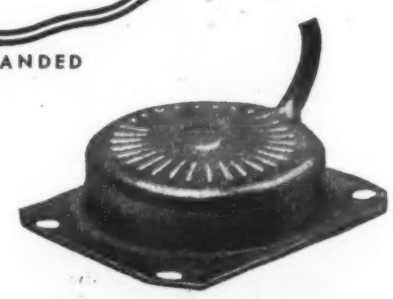
Above is a cross section of the diaphragm and part of the liquid-filled capillary. In this view the liquid has contracted, releasing the pressure on the diaphragm and causing the switch contacts to function.



EXPANDED

In this cross-sectional view, the liquid charge of the capillary has expanded with a rise in temperature. The positive force of this hydraulic action forces the diaphragm outward and causes the switch contacts to function.

Every part of White-Rodgers Hydraulic-Action controls is built stronger and *sturdier* because of the tremendous power of the solid-liquid charge. How this works is shown in these illustrations.



Actual-size illustration of the White-Rodgers diaphragm body, the actuating element of every White-Rodgers temperature control. It is so designed as to exert full pressure at the point of contact with the switch mechanism.

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NORTH KANSAS CITY . . . MO.

Dollar and Unit Sales of Commercial Refrigeration And Air Conditioning Equipment In 1940

Editor's Note: Last fall a survey was undertaken by the Bureau of Census, at the request of the General Industrial Equipment Division of WPB, to establish in detail the status of the refrigeration industry in the latest year not seriously affected by war conditions (1940). The figures collected are regarded as probably the most complete ever obtained, and AIR CONDITIONING & REFRIGERATION NEWS herewith publishes them for the record.

The statistics were compiled from reports submitted by 295 manufacturers. The reporting companies are said to have accounted for approximately 98% of the total production of commercial refrigeration and air conditioning equipment during 1940. For specific products the coverage may be higher or lower, although the percentage covered is probably not lower than 95% for any single product.

The collected data shows that in 1940 the refrigeration and air conditioning industry shipped 302,043 units of commercial refrigeration unitary equipment, with a value of slightly more than $66 million, manufacturers' prices. (This covered about everything but milk coolers.) In addition, the industry sold separately 165,759 enclosures for such refrigeration equipment with a value of about $12 million. Approximately 95,000 of these enclosures were of the non-mechanical type.

In terms of units, the most important type of commercial refrigeration unitary equipment was the beverage cooler, 78,397 of which were shipped during 1940. Ice cream cabinets were second with 74,281 units, 73,011 of which were of the dispensing variety while 1,270 were for ice cream hardening. Drinking water coolers, display cases, reach-in refrigerators, and beverage dispensers follow in that order. In terms of total dollar value, display cases are first with a value of more than $16 million.

Shipments of air conditioning units during 1940 totaled 36,573 with a value of more than $9 million.

Incorporated into the unitary refrigeration equipment and the air conditioning units were 338,666 condensing units, 106,950 of which were produced by companies manufacturing the unitary equipment.

Condensing units for commercial refrigeration shipped outside the industry during 1940 amounted to 228,684 units.

Table 1—Shipments of Commercial Refrigeration Unitary Equipment: 1940

Description of Product	Shipments of Complete Units — Self-Contained Units — Number	Self-Contained Units — Value	Remote Units — Number	Remote Units — Value	Enclosures Only — Number	Enclosures Only — Value
WALK-IN COOLERS	387	$ 253,757	4,769	$ 2,452,310	3,734	$1,409,91
REACH-IN REFRIGERATORS	6,284	1,410,605	14,358	4,064,494	8,026	1,971,60
BEVERAGE COOLING CABINETS	73,898	10,249,858	4,499	1,003,870	75,757	1,882,27
Mechanical	73,898	10,249,858	4,499	1,003,870	6,441	545,58
Coin operated	23,029	4,096,206	.....	.....	.....	.....
Not coin operated	50,869	6,153,652	4,499	1,003,870	6,441	545,58
Dry	11,811	1,971,123	4,356	975,313	4,661	449,58
Wet	39,058	4,182,529	143	28,557	1,780	95,97
Non-mechanical	.....	.....	.....	.....	69,316	1,336,70
DISPLAY CASES	9,981	4,270,239	26,382	12,011,432	6,577	2,592,09
Single duty	989	200,418	6,515	2,674,119	1,599	895,97
Double duty	5,199	2,825,649	12,738	6,420,531	2,209	964,16
Delicatessen	2,178	741,145	2,616	993,645	312	102,73
Vegetable	667	252,766	1,967	904,420	1,031	181,10
Dairy	303	75,107	1,489	695,124	516	221,48
Fish	99	31,896	698	153,925	706	192,11
Florist	11	4,775	198	111,308	89	27,68
Frozen food	535	138,483	161	58,360	115	6,82
BEVERAGE DISPENSING EQUIPMENT	14,241	3,326,881	6,263	1,244,049	9,513	842,12
Malt beverage dispensers	6,059	1,632,026	5,944	1,198,594	5,944	627,98
Mechanical	6,059	1,632,026	5,944	1,198,594	1,183	189,62
Non-mechanical	.....	.....	.....	.....	4,761	438,35
Carbonated beverage dispensers	7,703	1,573,155	15	2,250	2,815	155,00
Precooler cabinets	479	121,700	304	43,205	754	59,14
SODA FOUNTAIN EQUIPMENT	1,107	338,736	7,158	4,538,405	564	415,32
Creamer unit	9	7,625	3,022	3,105,139	318	332,08
Fountainette	1,039	315,659	2,012	808,493	74	36,33
Refrigerated backbar base	7	2,245	474	141,166	52	13,40
Salad-sandwich	52	13,207	1,650	483,607	120	33,49
ICE CREAM CABINETS	61,604	10,437,722	12,677	1,501,978	593	73,62
Dispensing*	60,889	10,113,601	12,122	1,309,841	571	65,56
Hardening	715	324,121	555	192,137	22	8,05
COUNTER FREEZERS	1,526	1,378,317	783	421,964	.....	.....
HOME FREEZERS	4,682	565,164	42	12,260	106	6,17
FARM FREEZERS	483	159,443	276	68,739	26	2,39
FROZEN FOOD DISPENSING CABINETS	4,066	1,136,415	59	17,380	4	63
DRINKING WATER COOLERS	41,994	4,467,461	2,852	164,775	24,584	638,35
Mechanical	41,994	4,467,461	2,852	164,775	3,991	305,59
Pressure	36,242	4,000,470	2,852	164,775	3,482	290,32
Bottle	5,752	466,991	.....	.....	509	15,27
Non-mechanical	.....	.....	.....	.....	20,593	332,76
PORTABLE BULK ICE-MAKERS	368	467,243	452	128,435	322	37,75
CUBE ICE-MAKERS	95	18,843	130	13,807	5,188	122,38
COLD STORAGE DOORS	.....	.....	.....	.....	12,575	909,74
OTHER REFRIGERATION EQUIPMENT†	605	125,357	22	9,200	18,190	865,15

Table 2—Shipments of Commercial Refrigeration and Air Conditioning Equipment—Domestic and Export: 1940

Description of Product	Total Shipments — Number	Total Shipments — Value	Domestic Shipments — Number	Domestic Shipments — Value	Export Shipments — Number	Export Shipments — Value
CONDENSING UNITS	211,021	$18,808,224	197,564	$17,423,301	13,457	$1,384,92
Ammonia refrigerants	985	963,979	902	892,832	83	71,14
Refrigerants except ammonia	210,036	17,844,245	196,662	16,530,469	13,374	1,313,77
Air cooled	187,468	12,313,004	175,153	11,322,991	12,315	990,01
Water cooled	22,568	5,531,241	21,509	5,207,478	1,059	323,76
COMPRESSORS AND COMPRESSOR UNITS	84,889	7,083,762	63,096	6,343,851	21,793	739,91
Ammonia refrigerants	1,734	2,234,262	1,525	1,966,578	209	267,68
Refrigerants except ammonia	83,155	4,849,500	61,571	4,377,273	21,584	472,22
CENTRIFUGAL REFRIGERATION MACHINES	112	2,403,536	101	2,237,426	11	166,11
HEAT EXCHANGER EQUIPMENT	.....	17,109,687	.....	16,478,106	.....	631,58
Evaporative condensers	2,413	1,768,676	2,212	1,665,919	201	102,75
Unit coolers	63,417	7,076,213	60,826	6,720,865	2,591	355,34
Air conditioning	5,955	2,269,210	5,624	2,180,441	331	88,76
Refrigeration	57,462	4,807,003	55,202	4,540,424	2,260	266,57
Other heat exchanger equipment	.....	8,264,798	.....	8,091,322	.....	173,47
AIR CONDITIONING UNITS	36,753	9,051,332	31,655	7,402,255	5,098	1,649,07
Store type	5,880	4,466,926	5,520	4,132,255	360	334,67
Room coolers	30,873	4,584,406	26,135	3,270,000	4,738	1,314,40
Window sill type	11,668	1,145,631	10,990	981,215	678	164,41
Floor type	19,205	3,438,775	15,145	2,288,785	4,060	1,149,99
ABSORPTION SYSTEMS OR EQUIPMENT	.....	830,613	.....	721,310	.....	109,30

*Except coin operated which are included with "Other Refrigeration Equipment."
†Coin operated ice cream dispensing cabinets, coin operated heads, rivet coolers, etc.

Table 3—Shipments of Commercial Refrigeration Unitary Equipment and Purchases of Components: 1940

Description of Product	Shipments of Complete Units — Self-contained units — Number	Self-contained units — Value (dollars)	Remote units — Number	Remote units — Value (dollars)	Shipments of Enclosures Only — Number	Shipments of Enclosures Only — Value (dollars)	Purchases of Components (Not Manufactured By Reporting Plant) — Condensing unit Number	Compressor unit Number	Forced air evap. Number	Enclosure only Number	Number of plants reporting
Prefabricated Walk-In Coolers and Storage Doors											
Walk-in coolers	387	$ 253,757	4,769	$2,452,310	3,734	$1,409,918	2,980	321	2,171	175	12
Cold storage doors	....	.....	....	.....	12,575	909,745	....	....	....	11	3
Reach-In Refrigerators											
Wall Type											
16 to 25 cubic feet	3,392	621,201	2,248	347,611	1,623	218,238	679	40	642	1,215	5
26 to 40 cubic feet	1,536	370,705	2,253	558,269	873	137,410	917	45	1,293	469	6
41 to 60 cubic feet	852	231,341	3,684	1,096,703	2,876	763,141	693	62	958	305	7
61 to 85 cubic feet	339	109,270	5,897	1,892,489	2,528	797,368	288	41	1,432	89	6
Over 85 cubic feet	165	78,088	267	165,282	80	42,617	189	10	115	1	9
Total	6,284	1,410,605	14,349	4,060,354	7,980	1,958,774	2,766	198	4,440	2,079	11
Counter Type											
All sizes	....	.....	9	4,140	46	12,835	....	....	5	....	6
Display Cases											
Single Duty											
Under 8 feet	707	73,098	461	107,118	58	82,327	749	24	58	4	4
8 feet	31	10,691	1,000	337,032	210	70,136	189	31	28	3	5
10 feet	103	38,965	2,392	944,942	515	212,048	932	31	61	13	6
12 feet	79	39,000	1,737	849,480	456	231,619	816	37	50	5	5
Over 12 feet	69	38,664	925	435,547	360	299,840	209	28	25	2	4
Total	989	200,418	6,515	2,674,119	1,599	895,970	2,895	151	222	27	9
Double Duty											
Under 8 feet	2,325	1,087,735	3,145	1,051,530	661	196,172	2,853	239	472	73	7
8 feet	1,392	802,744	4,460	1,966,464	592	256,636	2,263	187	1,263	104	7
10 feet	1,050	676,165	3,486	2,080,812	654	318,970	1,834	159	469	65	7
12 feet	304	178,330	1,171	926,845	244	146,473	733	32	139	8	6
Over 12 feet	128	80,675	476	394,880	58	45,911	146	41	51	3	4
Total	5,199	2,825,649	12,738	6,420,531	2,209	964,162	7,829	658	2,394	253	19
Full Vision or Delicatessen											
Under 6 feet	572	179,742	537	132,891	6	1,488	204	29	124	1	2
6 to 8 feet	1,320	474,450	1,518	488,791	214	59,738	377	45	486	60	5
Over 8 feet	286	86,953	561	371,963	92	41,527	91	121	108	10	4
Total	2,178	741,145	2,616	993,645	312	102,753	672	195	718	71	5
Vegetable											
Up to 7 feet	64	20,797	423	137,184	597	55,915	177	6	5	2	3
Over 7 feet	603	231,969	1,544	767,236	434	125,190	726	97	59	5	4
Total	667	252,766	1,967	904,420	1,031	181,105	903	103	64	7	5
Wall Type Dairy											
Up to 7 feet	237	51,082	473	192,964	122	45,539	158	13	84	229	5
Over 7 feet	66	24,025	1,016	502,160	394	175,946	231	53	116	1	3
Total	303	75,107	1,489	695,124	516	221,485	389	66	200	230	9
Fish											
Under 6 feet	2	490	207	22,700	12	1,763	113	....	....	....	1
6 to 8 feet	70	20,168	273	73,593	503	114,044	16	22	3	2	1
Over 8 feet	27	11,238	218	57,632	191	76,308	20	....	1	....	1
Total	99	31,896	698	153,925	706	192,115	149	22	4	2	3
Florist											
Up to 7 feet	6	2,600	110	46,781	64	14,928	33	13	15	....	3
Over 7 feet	5	2,175	88	64,527	25	12,753	45	11	21	....	3
Total	11	4,775	198	111,308	89	27,681	78	24	36	....	6
Frozen Food											
Under 6 feet	187	35,341	28	9,845	100	1,086	171	22	8	....	2
6 feet and over	348	103,142	133	48,515	15	5,737	272	36	10	....	2
Total	535	138,483	161	58,360	115	6,823	443	58	18	....	4

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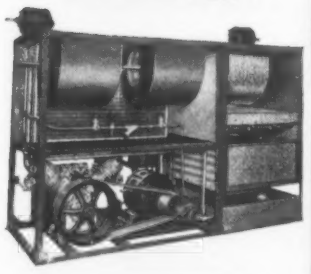

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Bottled Beverage Cooling Equipment											
Mechanical Dry Type Not Coin Operated											
Less than 5 cases	258	31,988	85	11,283	276	14,158	279	....	97	2	6
5 to 10 cases	3,515	249,711	384	58,008	1,802	101,462	1,567	89	1,478	31	27
Over 10 cases	8,038	1,689,424	3,887	906,022	2,583	333,975	3,265	345	1,738	1,693	60
Total	11,811	1,971,123	4,356	975,313	4,661	449,595	5,111	434	3,313	1,726	75
Mechanical Wet Type Not Coin Operated											
Less than 10 cases	35,106	3,540,096	70	6,537	1,761	91,825	9,854	1,038	45	5,908	18
10 cases and over	3,952	642,433	73	22,020	19	4,151	851	395	77	2,267	17
Total	39,058	4,182,529	143	28,557	1,780	95,976	10,705	1,433	122	8,175	23
Mechanical Coin Operated*											
Less than 5 cases	15,923	2,499,049	....	.....	....	.....	3,798	....	....	....	5
5 cases and over	7,106	1,597,157	....	.....	....	.....	3,263	....	763	464	10
Total	23,029	4,096,206	....	.....	....	.....	7,061	....	763	464	14
Non-Mechanical											
Less than 5 cases	....	.....	....	.....	37,897	511,469	....	....	....	129	16
5 to 10 cases	....	.....	....	.....	25,092	637,478	....	....	....	145	18
Over 10 cases	....	.....	....	.....	6,327	187,760	....	....	....	284	18
Total	....	.....	....	.....	69,316	1,336,707	....	....	....	558	28
Bulk Beverage Dispensing Equipment											
Non-Mechanical Malt Beverage dispensing Equipment											
Tap stands	....	.....	....	.....	899	53,682	....	....	....	....	10
Direct draw	....	.....	....	.....	3,862	384,674	....	....	....	48	13
Total	....	.....	....	.....	4,761	438,356	....	....	....	48	19
Mechanical Malt Beverage Dispensing Equipment											
Tap stands	1,615	292,756	954	228,398	206	30,933	1,805	63	7	42	14
Direct draw	4,444	1,339,270	4,990	970,196	977	158,695	4,550	218	738	92	36
Total	6,059	1,632,026	5,944	1,198,594	1,183	189,628	6,355	281	745	134	39
Other Bulk Dispensing Equipment											
Precooler cabinets†	479	121,700	304	43,205	754	59,143	494	....	182	10	13
Carbonated beverage dispensing equipment (not in bottles)	7,703	1,573,155	15	2,250	2,815	155,000	936	300	....	326	8
Soda Fountain Equipment											
Creamer unit (cooler box)	9	7,625	3,022	3,105,139	318	332,083	612	39	....	11	23
Fountainette (bobtail)	1,039	315,659	2,012	808,493	74	36,335	1,127	55	....	4	27
Refrigerated backbar base	7	2,245	474	141,166	52	13,409	14	4	23	....	20
Salad-sandwich unit	52	13,207	1,650	483,607	120	33,498	227	16	38	....	20
Low Temperature Freezing and Dispensing Equipment											
Counter freezer	1,526	1,378,317	788	421,964	....	.....	751	148	....	....	14
Ice cream hardening cabinets	715	324,121	555	192,137	22	8,052	335	1	....	1	16
Ice cream dispensing cabinets, except coin operated‡											
2 holes or less	5,985	575,077	483	17,825	55	3,266	1,126	724	....	70	22
3 holes	7,924	940,695	640	28,372	32	2,589	1,208	1,030	....	73	18
4 holes	18,451	2,618,296	2,789	195,070	154	12,010	3,741	2,948	....	155	28
6 holes	14,216	2,628,574	3,578	351,291	134	13,498	4,300	2,908	....	192	28
8 holes	10,088	2,214,962	2,951	395,318	107	16,891	2,734	1,975	....	120	26
10 holes	409	99,264	174	42,445	1	62	225	189	....	2	13
12 holes	3,816	1,036,733	1,507	279,520	88	17,253	1,252	705	....	24	24
Total	60,889	10,113,601	12,122	1,309,841	571	65,569	14,586	10,479	....	636	38
Frozen food dispensing cabinets	4,066	1,136,415	59	17,380	4	634	2,654	29	....	7	16
Home freezers	4,682	565,164	42	12,260	106	6,175	4,682	51	40	....	13
Farm freezers	483	159,443	276	68,739	26	2,392	546	....	....	23	15
Drinking Water Coolers											
Non-Mechanical											
Bottle type	....	.....	....	.....	14,300	136,087	....	....	....	....	4
Pressure type	....	.....	....	.....	6,293	196,682	....	....	....	....	11
Total	....	.....	....	.....	20,593	332,769	....	....	....	....	13
Mechanical											
Bottle type	5,752	466,991	....	.....	509	15,270	912	1,504	....	811	13
Pressure type (with or without precooler)											
Under 6 g.p.h.	15,993	1,476,377	115	1,106	1,291	45,185	3,637	979	....	2,240	17
6 to 10 g.p.h.	13,248	1,540,959	1,122	41,569	1,058	56,800	3,685	2,822	....	2,096	25
11 to 20 g.p.h.	5,295	717,774	1,364	71,702	595	80,545	992	646	....	799	19
Over 20 g.p.h.	1,706	265,360	251	50,398	538	107,790	345	75	....	527	14
Total	36,242	4,000,470	2,852	164,775	3,482	290,320	8,659	4,522	....	5,662	30
Miscellaneous Equipment											
Portable bulk ice-maker	368	467,243	452	128,435	322	37,750	37	....	....	20	10
Tube ice-making machines	95	18,843	130	13,807	5,188	122,387	31	....	....	6	17
Other refrigeration equipment§	605	125,357	22	9,200	18,190	865,156	602	15	25	....	10

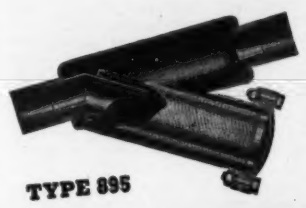
*Excludes coin-operated heads sold separately.

†Excludes walk-in precoolers.

‡Coin operated ice cream dispensing cabinets are included with "Other refrigeration equipment."

§Includes data for coin-operated heads for bottled beverage cooling equipment; bulk beverage dispensing equipment, except malt and carbonated beverages, not in bottles; coin operated ice cream dispensing cabinets; blood plasma cabinets; instrument treating cabinets; and rivet coolers. These items cannot be shown separately without the disclosure of individual operations.

(These are not the complete figures. Table 4 "Shipments of Air Conditioning Units, Condensing Units, Compressor Units, Heat Exchanger Equipment, Absorption Systems, and Centrifugal Refrigeration Machines and Purchases of Components, 1940" will be published in a later issue.)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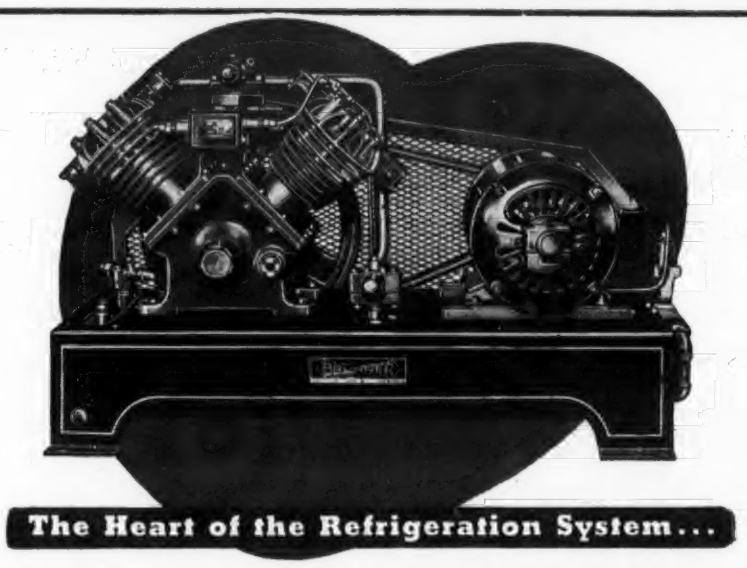
The Heart of the Refrigeration System...

THE CONDENSING UNIT

Manufacturers of all types of refrigerated cabinets are aware of the post-war trend in merchandising perishable foods. Many designs of show cases, cabinets, quick frozen food boxes, and reach and walk-in boxes have passed the drawing-board stage.

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GRUNOW AUTHORIZED SERVICE, INC., is the successor to General Household Utilities — building Genuine Grunow parts to the exact specifications with the same equipment as used by the original manufacturer.

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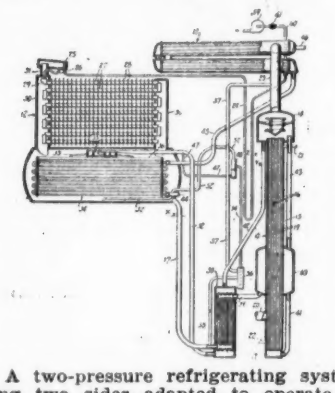
FACTORY TESTED PARTS

PATENTS

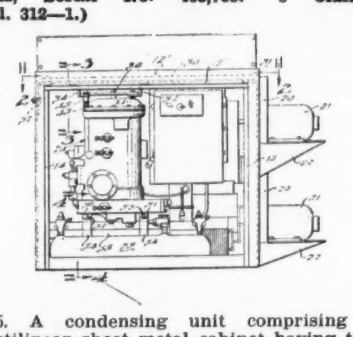
Weeks of Jan. 23 & 30

2,367,708. REFRIGERATION. Philip P. Anderson, Jr., Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application April 29, 1941, Serial No. 390,872. 10 Claims. (Cl. 62—119.)



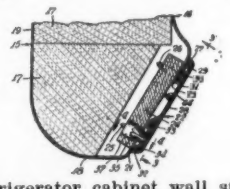
1. A two-pressure refrigerating system having two sides adapted to operate at different pressures and including a plurality of parts inter-connected to provide a first circuit for circulation of absorption liquid, an auxiliary branch circuit connected to the first circuit and in which absorption liquid is adapted to flow, said auxiliary branch circuit having one point connected for communication with one side of the system and another point connected for communication with the other side of the system, said auxiliary branch circuit being so constructed and arranged that absorption liquid flowing therethrough is capable of transferring non-condensible gas from said one point to said other point, said auxiliary branch circuit being so connected with said first circuit that circulation of liquid in said first circuit effects flow of liquid in said auxiliary branch circuit.

2,367,801. CONDENSING UNIT. Charles P. Russell, Dayton, Ohio, assignor to Chrysler Corp., Detroit, Mich., a corporation of Delaware. Application Oct. 29, 1942, Serial No. 463,765. 5 Claims. (Cl. 312—1.)



5. A condensing unit comprising a rectilinear sheet metal cabinet having two side walls and a rear wall, the front of said cabinet being open, a horizontal brace extending between and joining the upper portions of the side walls, an angle bar fastened horizontally of the upper portion of the rear wall, a pair of track bars extending between and connected to the brace and angle bar, a supporting member positioned between and supported by the track bars, suspension means supported centrally of the supporting member, and a motor compressor unit connected to the suspension means, said angle bar being located closer to one side wall than the other, the distance from the suspension means to the center of the angle bar on the rear wall being substantially equal to the distance between the suspension means and a point on said one side wall located at the center of the end of the horizontal brace joined thereto.

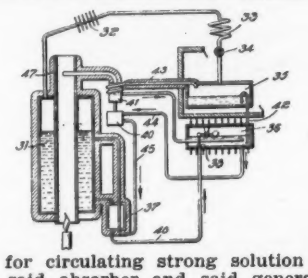
2,367,886. REFRIGERATOR. Carl H. Nauert, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application July 18, 1940, Serial No. 346,126. 1 Claim. (Cl. 220—3.)



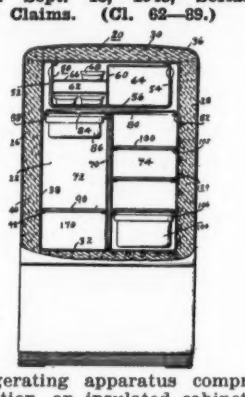
In a refrigerator cabinet wall structure having inner and outer panels secured in spaced relation, a trim strip of substantially rigid thermal insulating material bridging the space between said panels, said trim strip having longitudinal ribs on its undersurface, one of said ribs being formed for hooked engagement with holding means on a flange of one of said panels for securing one edge of the trim strip in place, another pair of said ribs forming between them an undercut channel, and a series of snap fastening elements slidably held in said channel, a flange of the other of said panels having a corresponding series of fastening elements which cooperates with said first series for securing the other edge of the trim strip in place.

2,368,101. THERMAL PUMP. Rudolf Bottcher, Hohen-Neuendorf, near Berlin, Germany; vested in the Alien Property Custodian. Application June 8, 1940, Serial No. 339,562. In Germany June 9, 1939. 17 Claims. (Cl. 62—119.)

9. In a refrigerating apparatus of the class described, the combination of a heat operated refrigerant generator and an evaporator and absorber for receiving said refrigerant, with a heat operated pump for circulating strong solution between said absorber and said generator, said pump comprising means forming a pumping chamber for said strong solution, means forming a separate control chamber containing an operating fluid, common heat producing means for said generator and for heating the operating fluid in said control chamber, said operating fluid being displaced within said control chamber and the pressure therein being increased responsive to such heating, cooling means for said control chamber for subsequently cooling said operating fluid to reduce the pressure therein, means responsive to the pressure fluctuations in said control chamber for causing the strong solution in said pumping chamber to circulate, and means for circulating through said cooling means refrigerant flowing from the evaporator to the absorber.

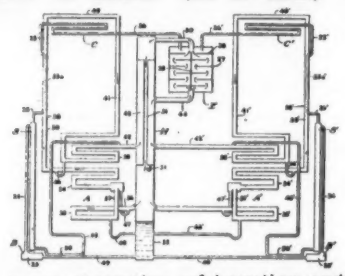


2,368,294. REFRIGERATING APPARATUS. Whitney Giffard, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Sept. 13, 1943, Serial No. 502,137. 4 Claims. (Cl. 62—89.)



1. Refrigerating apparatus comprising, in combination, an insulated cabinet having a food storage chamber, refrigerant evaporating means disposed in said chamber for freezing substances and for cooling circulating air, vertically arranged partitioning means arranged to divide said chamber into two compartments that are in direct air circulating relation with said evaporating means and in communication with each other at one end of said compartments only, means associated with one of said compartments for restricting the circulating of air between said compartment and said evaporating means and a second refrigerant evaporating means arranged in heat exchange relation with said one compartment.

2,368,374. REFRIGERATION. Rudolph S. Nelson, Larchmont, N. Y., assignor to The Hoover Co., North Canton, Ohio. Application March 22, 1939, Serial No. 263,527. 21 Claims. (Cl. 62—119.5.)



1. In an absorption refrigerating system having an absorber and an evaporator which operate at substantially the same total pressure and in which an auxiliary pressure equalizing medium is employed, an absorber having a plurality of sections, means connecting said sections to the evaporator and for causing the auxiliary pressure equalizing medium to pass through said sections in parallel circuits, each of said sections having a plurality of stages and means for causing one of the stages of each section to operate at a higher temperature than another stage thereof.

2,368,438. REFRIGERATION. Sven W. E. Andersson, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application July 18, 1941, Serial No. 402,911. 8 Claims. (Cl. 62—5.)

1. In a refrigerator having a storage compartment cooled by an element of refrigerating apparatus operated by a gas burner, a control for said burner including a first valve for starting and stopping flow of gas to said burner, a second valve for causing operation of said first valve, a first control element arranged to operate said second valve to start flow of gas

(Concluded on Page 27, Column 1)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $2.50 per insertion. Limit 50 words.

RATES for all other classifications $5.00 per insertion. Limit 50 words.

Advertisements set in usual classified style. Box addresses count as five words, other addresses by actual word count.

PAYMENT in advance is required for advertising in this column.

POSITIONS AVAILABLE

WANTED: A-1 refrigeration mechanic to take charge of commercial refrigeration department for substantial, aggressive, and well established New Mexico firm. Remuneration open and will arrange on satisfactory basis. Excellent climate and living conditions. Write Box 672, Albuquerque, New Mexico for details, giving complete information.

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SAN DIEGO, California. Wright Refrigeration Service requires first class service men at $1.25 per hour with time and half over 40 hours per week. Steady work, lots of overtime, and the best climate in America. WRIGHT REFRIGERATION SERVICE, 1337 India St., San Diego, Calif.

REFRIGERATION shop foreman. $75 weekly, 48 hours, New York City. Box 1671, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICE man, commercial and domestic. 60% (of $2.50) time paid by customer, 10% commission, all parts and merchandise sold, mileage. Full time. Write ACME REFRIGERATION ENGINEERING, Merced, Calif.

WANTED: REFRIGERATION Sales Engineer, draft exempt, by well-established Midwest refrigeration parts and equipment jobber. Good salary and real future for right man. Write giving full particulars. Box 1682, Air Conditioning & Refrigeration News.

COMBINATION DRAFTSMAN and general office engineer for refrigeration-air conditioning contractors-distributors. Well financed; will expand considerably postwar, resulting excellent opportunity right man becoming key employe. Experience both Ammonia, "Freon" applications desired but not required. Application confidential; advise qualifications, salary expected. RUSHTON EQUIPMENT CO., Box 1751, Birmingham, Ala.

WANTED: Manager for our Commercial Refrigeration and Hotel Supply Department. Must be able to make sales direct to merchants as well as train new salesmen. Must be experienced and capable of earning over $5,000 yearly. KUHR BROTHERS, Savannah, Ga.

WANTED: REFRIGERATION service-erection man for commercial and industrial work in lower New York State. Location Poughkeepsie, N. Y. Must be familiar with "Freon" commercial plants. Write giving full details. Union scale. Box 1684, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER. Practical experience in erection, operation, and maintenance. Full charge of shop repairs "Freon" and ammonia compressors. Gold Seal license. Tool maker. Union scale. Distributor for York. Location Jersey City, New Jersey. State qualifications, age, nationality. All replies held strictly confidential. Box 1683, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

250 FRIGIDAIRE model "N," "W350," "W233," and "C." All with 110-220 V. 60 cycle, REP. IND. Motors. Remanufactured ice cream cabinets. Send for list and price. EDISON COOLING CORP., 310 E. 149 St., New York 51, N. Y.

FOR SALE two 7½ x 7½ York enclosed type ammonia compressors complete with two 20-H.P. motors, belts, condensers, pipes, brine tank, cork, valves, etc. No reasonable price refused. E. E. BRAUNSTEIN, 61 Channet St., Taunton, Mass.

AIR CONDITIONERS: Four, 15-hp. General Electric remote type. Complete with coils, blowers, starters, switches, etc. Motors 220-440 V., 3-phase. Price $2,975 f.o.b. Kansas City, Mo. ARCTICAIRE REFRIGERATION CO., 3939 Broadway, Kansas City, Mo. Tel. Westport 9667.

NEW STEAM tables: 72" long, 33" wide, 34" high. 1,500 watt electric unit, 20 g. stainless steel top, 4 porcelain sliding doors, porcelain ends, 2 shelves under table. Crated, f.o.b. Kansas City, Mo., $197.50 each. Pictures, quantity prices on request. ARCTICAIRE REFRIGERATION CO., 3939 Broadway, Kansas City, Mo. Tel. Westport 9667.

FOR SALE: 20 ton creamery package horizontal ammonia compressor, with or without 35-hp. motor, 3-phase. 900 speed. SAMUEL J. ANSFIELD CO., 331 N. Water St., Milwaukee 2, Wis.

NEW CHIEFTAN high sides, air cooled, complete with low pressure controls; original factory crates. ¼ hp. $77.25, ⅓ hp. $80.83, ½ hp. $109.55. All prices f.o.b. Kansas City, Mo., 25% is required with order. AA3 or higher priority required. Write or wire, ARCTICAIRE REFRIGERATION CO., 3939 Broadway, Kansas City 2, Mo.

FROZEN FOOD cabinets: 7½ to 20-cubic foot self-contained. Reach-in refrigerators 20 to 65 cubic foot. Bottle beverage coolers. Walk-in coolers, milk coolers, water coolers. Condensing units, blower coils. All sizes new and used. Phone Rittenhouse 6359 or write JORDON REFRIGERATOR CO., 235 N. Broad St., Philadelphia 7, Pa.

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USED AND surplus refrigeration and air conditioning equipment is in great demand. Wire us for speedy action and the highest cash price. Parts, units, complete systems purchased anywhere, all sizes and any condition. E. M. FAIRBANKS CO., 2548 E. Tremont Ave., New York City 61, N. Y.

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ACCOUNTANT—Office Manager seeks connection with Appliance Distributor or Manufacturer. Over twenty years experience in managing and merchandising. Can take an active interest. Box 1658, Air Conditioning & Refrigeration News.

MANUFACTURER'S REPRESENTATIVE: Qualified Air Conditioning and Refrigeration Engineer, 17 years experience organizing and training Distributor and Dealer personnel. Recently honorably discharged Army Air Forces. Desires to represent reputable manufacturers of Commercial Refrigeration Equipment and kindred parts in Texas and surrounding territory exclusively. Financially responsible. Box 1665, Air Conditioning & Refrigeration News.

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FOR SALE: Refrigeration Sales & Service, excellent location and clientel. One of, if not the best equipped shop in the South. Excellent sales rooms, nice light shop, oil heated. Several nice franchises. Located in the fastest growing city in Florida. Box 1668, Air Conditioning & Refrigeration News.

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MR. MANUFACTURER: are you interested in representation in Florida for your refrigeration or air conditioning products? We may be just what you are looking for. Your proposition will be kept very confidential. We have finances and are progressive. Write Mr. Griffin, SOUTHLAND REFRIGERATION CO., 202 Postal Bldg., Miami 32, Fla.

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1—Used 30 ton 30 HP Air Conditioning Unit.

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All to be complete with condensing units, compressors, and coils.

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ENGINEERED TO YOUR EXPECTATIONS
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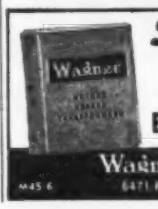

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DESIGNED FOR LIMITED SPACE APPLICATIONS
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LARKIN COILS, Inc., 519 Memorial Dr., S.E., Atlanta, Ga.

THE RESPONSE HAS BEEN TERRIFIC . . .
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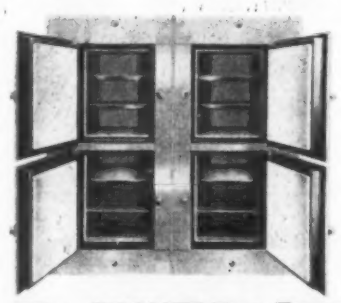

Wilson ZEROSAFE Farm Freezer
Model FF-60 (Cap. 60 cu. ft.)
Self-Contained Models:
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Sectional Models: Up to 100 cu. ft.

1. From 1939 up to the time government limitation became effective, Wilson Reach-In Farm Freezer production was doubled and redoubled to meet rapidly growing demands.
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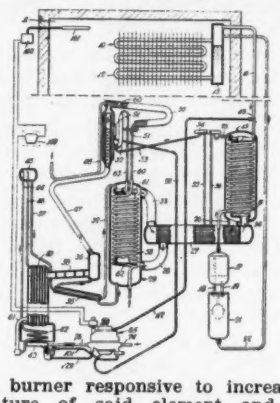
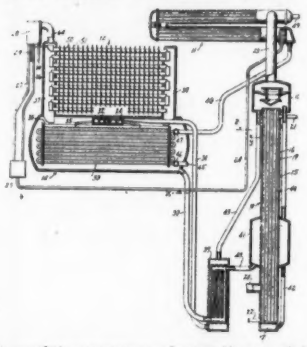
Patents (Cont.)

(Concluded from Page 26, Column 3)



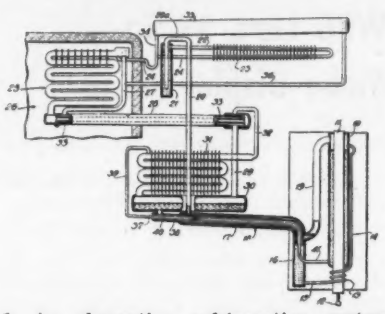
to said burner responsive to increase in temperature of said element and stop flow of gas to said burner responsive to decrease in temperature of said cooling element, and a second control element arranged to operate said second valve only in a direction to stop flow of gas to said burner and responsive to decrease in temperature of air in said compartment.

2,368,455. REFRIGERATION. Per Edberg, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Sept. 25, 1941, Serial No. 412,228. 9 Claims. (Cl. 62—119.)



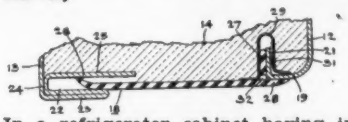
1. A multi-pressure absorption refrigeration system having a generator and a condenser adapted to operate at one pressure and an evaporator and an absorber adapted to operate at a lower pressure, and connections for the aforementioned parts to provide circuits for circulation of refrigerant and absorption liquid, the connection through which liquid is conducted from the condenser to the evaporator including a U-trap having a down-leg and an up-leg comprising a plurality of parallel branches for supplying liquid to different parts of the evaporator, said parts and connections being so constructed and arranged that the liquid flowing into said branches has a vapor pressure greater than the vapor pressure in the evaporator whereby vaporization of liquid takes place in said branches to produce vapor blocking therein to promote division of liquid into the branches.

2,368,493. REFRIGERATION. Bengt Belstad, Stockholm, Sweden. Application Nov. 25, 1941, Serial No. 420,352. In Germany Dec. 7, 1940. 4 Claims. (Cl. 62—119.5.)



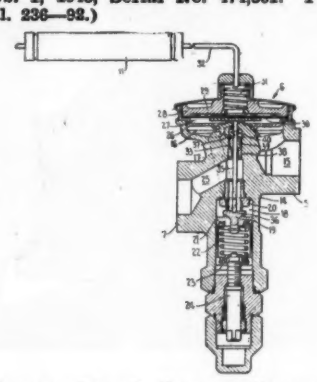
1. An absorption refrigeration system having a circuit for inert gas, a circuit for absorption liquid including a generator and an absorber and in which liquid is caused to circulate by vapor lift action, a rectifier for refrigerant vapor located beneath the surface levels of liquid in said generator and said absorber arranged to be cooled by liquid in said circuit and communicating with said circuit for drainage of condensate from the rectifier into the circuit, and a conduit for conducting vapor from said rectifier, said conduit forming a liquid column forming trap arranged to impose a resistance to vapor flow such that the necessary vapor pressure to overcome such resistance is sufficient to bar entrance of liquid from said circuit into said rectifier.

2,368,542. REFRIGERATION APPARATUS. Russell M. Hall, Philadelphia, Pa., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Aug. 11, 1942, Serial No. 454,380. 2 Claims. (Cl. 220—9.)



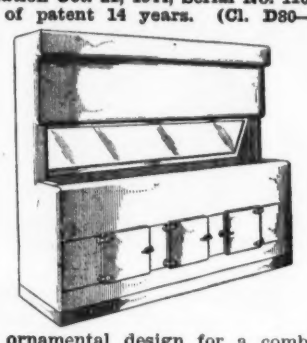
1. In a refrigerator cabinet having insulated walls comprising first and second shells with thermal insulation therebetween, said walls having an access opening, the edge portions of said first and second shells at said access opening terminating in spaced-apart relation, the edge portion of said first shell having an inner and an outer flange forming a groove which lies parallel to the edge portion of said first shell, the combination with said cabinet of a breaker strip formed of hard-non-metallic material, said breaker strip having two longitudinal edge portions, one of said edge portions being thinner than the body of the breaker strip to render said edge portion more flexible, said one edge portion lying in said groove and being curved to form an obtuse angle with the portion of the breaker strip adjacent thereto, said breaker strip being so positioned on said cabinet that the extreme edge of the curved edge portion is biased against the inner flange of said groove and the portion of the breaker strip at the mouth of said groove is biased against the outer flange thereof.

2,368,592. EXPANSION VALVE. Earnest J. Dillman, Detroit, Mich., assignor to Detroit Lubricator Co., Detroit, Mich., a corporation of Michigan. Application Feb. 1, 1943, Serial No. 474,301. 1 Claim. (Cl. 236—92.)



A gas charged thermostatic expansion valve comprising a hollow casing having spaced suction pressure and valve chambers and having a straight passageway extending between and opening at its opposite ends through the adjacent end walls of said chambers, said casing having an annular guideway and closure portion extending into said passageway substantially in the plane of said suction chamber end wall, a diaphragm forming a wall of said suction chamber, a valve member in said valve chamber and controlling flow into said passageway, a thermostatic power element having a pressure chamber with the expansible wall thereof formed by said diaphragm, said power element having a feeler bulb containing a volatile liquid in limited quantity entirely condensible out of said bulb into said element pressure chamber, said casing having an inlet passageway leading to said valve chamber and having an outlet passageway from said straight passageway, means to warm said power element pressure chamber, a thrust rod extending longitudinally through said straight passageway and reciprocally guided in said annular portion and having its ends engaging said diaphragm and said valve member, an annular plug member surrounding said thrust rod adjacent said annular portion to provide a draw-off chamber therebetween and separating said outlet passageway from said draw-off chamber, a sleeve member slidably fitting said thrust rod within said draw-off chamber and seating on said plug member to close the clearance space between said plug member and said thrust rod, a helical spring surrounding said rod and held under compression between said sleeve member and said annular portion, said casing having an equalizer passageway opening directly into and through the side wall of said draw-off chamber, said annular portion fitting said thrust rod sufficiently closely so that suction pressure in said equalizer passageway will prevent refrigerant medium which escapes into said draw-off chamber from flowing into said suction pressure chamber.

140,198. DESIGN FOR A COMBINATION REFRIGERATOR AND FROZEN FOOD DISPLAY. Jerry Tyler, Niles, Mich., assignor to Tyler Fixture Corp., Niles, Mich., a corporation of Michigan. Application Oct. 21, 1944, Serial No. 116,134. Term of patent 14 years. (Cl. D80—11.)



The ornamental design for a combination refrigerator and frozen food display, substantially as shown and described.

HE'S RUNNING AWAY FROM A WET SITUATION, *but* . . .

. . . the grim urgency of the matter will bring him back to finish the job.

Unlike the retreating youth, the wise refrigeration service engineer on a moisture case would simply reach for the TZ and, in nine out of ten cases, the trouble would be over in short order. He wouldn't have to come back. He'd be on his way to the next call.

Time-saving, gasoline-economizing, profit-paying TZ is waiting for the progressive engineer at the store of the live jobber. Stock it today.

"The Moving Dehydrant"

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Refrigeration today is performing a vital service by guarding and preserving for future use, priceless food which might otherwise be wasted. Write for literature.

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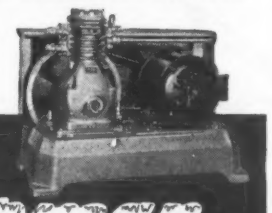

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AUTOMATIC REFRIGERATION

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Acme products are backed by more than 26 years experience in building refrigeration and air conditioning equipment. Our engineering staff is at your service. Offices in principal cities. See your phone book . . . or write.

Acme equipment is delivering satisfactory performance in thousands of installations.

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FREON CONDENSERS
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Write for catalog on any item.

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SUNROC WATER COOLERS are built to the high standards exacted by the Army, Navy, and Maritime Commission . . . by specialists whose entire resources and manufacturing facilities are devoted to the perfection of this single, highly specialized product—water coolers.

PROFIT FROM NATION-WIDE LEADERSHIP

Since October, 1936, Sunroc has been sole contractor for all sizes and types of water coolers bought by the United States Government from the General Schedule of Supplies. A unique record of over eight consecutive years of service to the Nation!

With Sunroc now going all-out for the national market, its product will continue to be built up to the same standard of highest perfection, rather than down to a price. It will retain its leadership in a field where quality counts . . . in an almost boundless market which has scarcely been scratched.

In rounding out its merchandising structure, Sunroc is selecting distributors of the highest calibre . . . men who will recognize their unparalleled opportunity, and measure up to it. Sunroc offers them a high quality, prestige-building line, with the incentive of a fair, ample, and assured profit, including profit-protection on national accounts. They will be backed by close factory cooperation, powerful national advertising in well-chosen media, and direct-mail promotion.

Sunroc opens before you an exceptionally attractive and profitable future. Capacity business is indicated, indefinitely. Your inquiry, on the coupon below, will bring you prompt and full information concerning Sunroc Water Coolers, and the Sunroc franchise in your community. SUNROC REFRIGERATION COMPANY, Glen Riddle, Pa.

"THERE'S NOTHING LIKE A GOOD DRINK OF WATER"

SUNROC
Water Coolers
GLEN RIDDLE, PA.

SUNROC REFRIGERATION COMPANY
Glen Riddle, Pa.
Gentlemen:
Please send full particulars on the Sunroc Water Cooler franchise, and your story of "One Product, One Price, One Policy."

Name _____
Street _____
City and State _____
I am now a water cooler dealer distributor
I am not
ACRN-2

New Deferment Procedure Muddles Status of Men Under 26 In Draft

(Concluded from Page 1, Column 2)

ment.

This resulted in refrigeration repairmen being left in the same class with bicycle and sewing machine repair workers, and many were quickly reclassified into 1-A, or in some cases ordered to take jobs in war plants.

Local Refrigeration Service Councils relayed these occurrences on to W. Ray Kromer, chairman of the National Council, and he took immediate measures to get further consideration of the refrigeration repairmen in Washington.

That Mr. Kromer got a hearing at all is considerable of an achievement. Up to Feb. 19 the refrigeration group was the only group from industry that the "Committee on Essential Activities" had permitted to appear before it.

It is reported that the government committee indicated it might withhold action to see how the new plan of having 15 government procurement agencies make requests for deferment of key men worked out.

In the meantime, Mr. Kromer said that he might attempt to obtain another directive from the office of Maj. Gen. Hershey, Selective Service director, similar to the one obtained in 1943, advising local Selective Service boards that refrigeration repairmen were urgently needed on their jobs and to stay the drafting of them wherever possible.

Agencies that may certify names of workers under the new program are the Army Service Forces, the Navy, the Army Air Forces, War Production Board, United States Maritime Commission, Petroleum Administration for War, Office of Defense Transportation, War Food Administration, Coordinator of Fisheries, Rubber Reserve, Solid Fuels Administration for War, Review Committee on Deferment of Government Employes, National Roster of Scientific and Specialized Personnel, Office of Scientific Research and Development and Procurement and Assignment Service.

15 Claimant Groups Can Seek Deferments

WASHINGTON, D. C. — Fifteen government procurement agencies are authorized to make requests for deferment of men under 30, who hold key jobs in war plants or in activities in support of the war effort, under a plan approved Feb. 17 by War Mobilization Director James F. Byrnes.

The 15 agencies may certify to local draft boards the names of men, 18 through 29, who they believe should be given consideration for deferment in the interests of the war program or public health and safety.

(At first glance, it does not appear that this plan will be of much help to refrigeration repairmen and engineers in the 18-29 age brackets. It might be that the War Production Board or possibly War Food Administration might go to bat for deferments for such men in the interests of "public health and safety.")

The plan will not interfere, it is said, with the regular draft board procedure to defer registrants, whether they are certified or not, who are judged "necessary to and regularly engaged in" war production or a war supporting activity.

The final decision as to whether a man will be deferred or not will rest solely with the local Selective Service board.

Wanted:

TWO EXECUTIVES FROZEN FOODS

Large food distributing company has unusual openings for two men with technical training and administrative experience in frozen foods.

PRODUCTION MANAGER

To set up and direct production of frozen fruits, vegetables, and meats on a national scale.

Must know: varieties of products suitable for freezing; product preferences of consumers; location of best growing areas and sources of supply; types of equipment and containers required; most efficient transportation methods.

DISTRIBUTION MANAGER

To organize and supervise wholesale distribution.

Must know: warehousing problems; refrigeration required for each product; type of refrigerated trucks to be used for delivery to retail outlets; store display fixtures desirable.

Both positions are permanent with appropriate salary and attractive future.

Send letter, giving full details of training and experience, including age, draft status and availability, employment and earnings record. Reply held in strict confidence and, if preferred, may be submitted through another person.

Write Box 1680 Air Conditioning and Refrigeration News

Theis Is Elected V.P. of Philco

PHILADELPHIA — Edward F. Theis, who until 1942 was closely associated with the company's refrigerator division, has just been elected vice president in charge of refrigerator production for Philco Corp., it was announced today by John Ballantyne, president.

Mr. Theis assumes his new duties immediately, with a view to aiding the research and development work for the war production program that has been undertaken by the refrigerator division. Since leaving Philco in 1942, Mr. Theis has been connected with the Curtiss-Wright Corp. as manager of its Indianapolis propeller plant.

WPB Lists 34 To Make Display Cases

(Concluded from Page 1, Column 3)

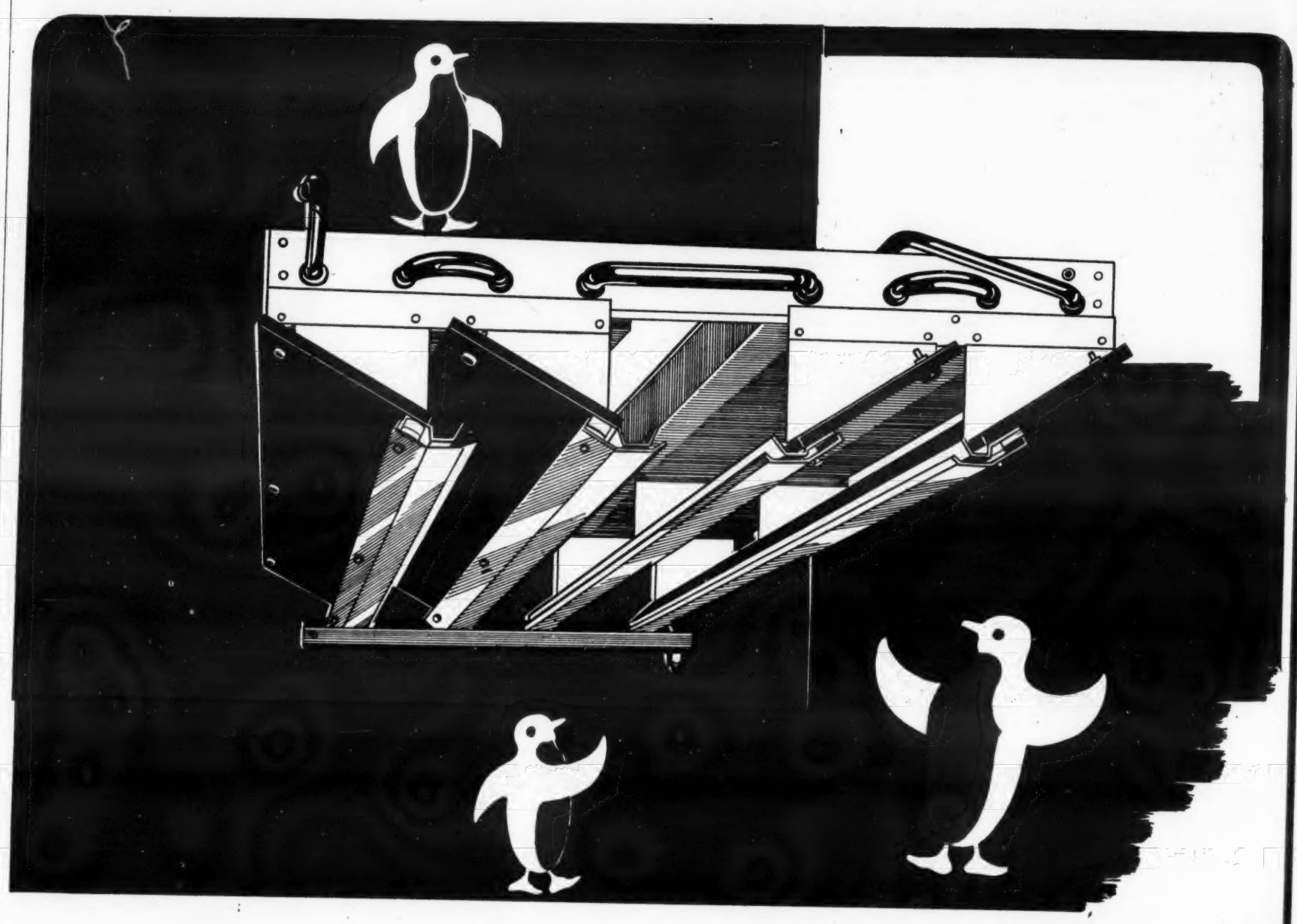
ment will have to be sold on rated orders and for replacement only.

List of authorized firms follows:

American Store Fixture Co., Fall River, Mass.; American Refrigerator Co., Philadelphia; F. A. Atherton Co., Worcester, Mass.; Birkenwald Co., Portland, Ore.; Capitol Fix. & Supply Co., Denver; Commercial Refrigerator Co., Cincinnati; Crager Refrigerator Co., Milwaukee; I. Paul Daemicke Co., Chicago; Dason Equipment Co., Brooklyn; East Bay Refrig. & Fix. Co., Oakland, Calif.; Fleetwood Craftsman, Inc., Fleetwood, Pa.; Ed Friedrich, Inc., San Antonio.

General Refrig. Mfg. Co., Blairsville, Pa.; Girard Store Fix. Co., Philadelphia; Grand Show Case Co., Minneapolis; John Harrel & Sons Co., Columbus, Ohio; C. V. Hill & Co., Inc., Tenton, N. J.; Jordon Refrigerator Co., Philadelphia; The Koch Butcher Supply Co., North Kansas City, Mo.; Kroger Grocery & Baking Co., Cincinnati; Jack Langston Mfg. Co., Dallas, Tex.; E. S. Matthews, Inc., Spokane, Wash.; Morton Show Case, Inc., Washington C. H., Ohio.

McCray Refrigerator Co., Kendallville, Ind.; C. L. Percival Co., Boone, Iowa; Refrigeration Engineering Co., Seattle; Royal Store Fixture Co., Philadelphia; C. Schmidt Co., Cincinnati; Southern Fixture Mfg. Co., Greensboro, N. C.; Tyler Fixture Corp., Niles, Mich.; Wells Birkenwald Co., Seattle; Ward Refrigeration & Mfg. Co., Los Angeles; Winorke Mfg. Co., Tacoma, Wash.; Zero Plate Co., Dallas, Tex.



Bush Plasti-Cooler

Now Available — Faster Deliveries

A noteworthy contribution by BUSH to the refrigeration industry, the BUSH PLASTI-COOLER combines the efficiency of the famed Bush Finned Coil with the proved advantages of sturdy plastics . . . the original application of plastics to the low side field. Coil features aluminum fins spaced 1/3" — 1/2" — 3/4" and copper tubing (5/8" to 100 lin. feet — 3/4" over 100 lin. feet). Baffles of gleaming, jet-black plastics eliminate all sweating . . . enhance appearance. Scientifically calculated pitching insures maximum cold air discharge. A choice of widths is available for different box sizes. The BUSH PLASTI-COOLER is the most modern evaporator at any price. For advanced engineering . . . BUY BUSH.

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